

# Managing Change in High-Risk Environments

[Bob Baron, Ph.D](#)

The Aviation Consulting Group

As part of an organization's safety management system (SMS), the management of change (MOC) process falls under the Safety Assurance element (colloquially known as the Third Pillar of Safety). But what exactly is MOC and why is it such an important aspect of a safety system?

First and foremost, without a supportive culture (including a Just Culture), it will be extremely difficult, if not impossible, to proactively manage organizational change with MOC cases, which can be the result of, for instance, lack of management support or buy-in. Assuming you have a supportive culture, the MOC process should be able to reach maximum efficacy. According to the International Civil Aviation Organization (ICAO), Annex 19, Appendix 2, Section 3.2 (The Management of Change):

*The service provider shall develop and maintain a process to identify changes which may affect the level of safety risk associated with its aviation products or services, and to identify and manage the safety risks that may arise from those changes.*

These changes can range from relatively minor—such as new/revised documentation—to much larger and complex changes such as expansion/contraction, a new fleet, or new routes. MOC is a *formal process* to help organizations manage operational risks, which is particularly important in high-risk industries, such as aviation. Changes—both positive and negative—can, and will, introduce new hazards and safety risks. These risks, if not mitigated, can lead to significant material and/or human losses.

## The MOC Process

An MOC case works basically the same way as the normal, everyday safety risk management (SRM) processes that you currently have in place; a process used to identify hazards and mitigate risks. The main difference is that an MOC case will generally be of a much larger magnitude, typically requiring more involvement with management and stakeholders, as well as human and financial resources. It may also require a significant amount of time for completion.

Failing to conduct an MOC case, when one should be conducted, commonly occurs. The reasons for this can range from not fully understanding the need for an MOC case, to simply not wanting to conduct one. The latter can be associated with the organization's safety culture (or lack of), as mentioned previously.

Significant changes in the organization and/or operation will drive the need for a formal MOC case. Building an MOC case is a *five step* process, each step building upon the previous step in a systematic and logical manner. Those steps, and what they entail, are as follows:

### **Step 1: Develop the Case**

MOCs require the development of a business case. Since the change will introduce new hazards and risks, a careful assessment of the change needs to be conducted, and a formal business case needs to be developed. From the very beginning of the project, there must be management involvement, as well as involvement from the appropriate stakeholders. Depending on the size and complexity of the change, there may be a substantial allocation of human and financial resources required. Changes can be either external or internal. Examples of both include:

- External changes-
  - New regulations
  - New vendors/service providers
  - Security
  
- Internal changes-
  - Management changes
  - Expansion
  - Contraction
  - Operations during bankruptcy
  - Mergers/acquisitions
  - New equipment
  - Policies
  - Procedures

## **Step 2: Conduct Risk and Opportunity Planning**

Risk and opportunity planning may be considered the most critical part of an MOC case. This step addresses such things as strengths, weaknesses, hazards, and the risks that the organization can expect as a result of the change. This can be a bit time consuming, but well worth the effort. However, it is important to keep in mind that no one can think of every possible scenario during this part of the process. It *will* be dynamic.

Typically, this step is broken down into two components, each complementing the other, and providing a detailed evaluation of the effects of the change(s). The two components consist of a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, and a Hazard Identification and Risk Control (HIRC) process. Each of these are described below and incorporate a hypothetical MOC related to the addition of a new runway at a reliever airport.

- **SWOT Analysis (there may be multiple elements for each SWOT category. Only one example is used for each category)-**
  - Strengths?
    - Increased efficiency
  - Weaknesses?
    - Construction hazards 24/7 for an extended period of time
  - Opportunities?
    - Attract new airlines/fleet types (the new runway will be able to accommodate larger aircraft)
  - Threats?
    - Environmental impact study revealed that there may need to be airspace restrictions due to wildlife/noise issues
  
- **Hazard Identification and Risk Control (this list can be large. Only one hazard/risk example is used)-**
  - What is the hazard?
    - Airport construction
  - What is the risk?
    - Runway incursion
  - What can go wrong?
    - An aircraft lands, or takes off, on runway under construction (closed)
  - Risk mitigation
    - NOTAMS, signs, barriers, etc.

### **Step 3: Prepare the Project Plan**

This step is people-centered, as the project plan will require an abundance of human resources. A Project Director should be appointed to oversee the overall implementation process. At the same time, a Project Manager should be appointed who will be responsible for implementing the project plan.

Using the reliever airport as an example, development of the project plan will include (non-exhaustive list):

- Resources needed-
  - Human and financial
- Logistics/coordination-
  - When, where, how?
- External contractors-
  - Access, training, etc.
- Security requirements
- Safety requirements
- Reporting requirements

You also need to consider the “people” aspect of the change. Many organizations lose sight of their employee’s roles, responsibilities, and sacrifices that may need to be made during an MOC process. MOC, understandably, is focused at the top of the organizational structure, but it should be understood that the change will involve *all people, at all levels, of the organization*. Issues that should be investigated and/or acted upon include:

- Current culture-
  - Supportive or non-supportive?
- Union?
  - Labor issues

Additionally, while preparing the project plan, you should consider some of the potential, internal barriers to change. Examples of these barriers can include:

- “Homework” not done-
  - Refers to the tendency of not gathering all the required details to successfully prepare the project plan. This can lead to uninformed decisions, based on lack of information, which in turn can lead to problems in the execution and completion of the project in the proposed time frame.
- Monolith/Red Tape/Bureaucracy-
  - Monolith is defined as “a large and impersonal political, corporate, or social structure regarded as intractably indivisible and uniform.” Some organizations have more layers of red tape and bureaucracy than others. This can obviously affect the execution of the project plan by causing delays and organizational conflict which in turn usually leads to exceedances of budgets and the proposed time frame.

#### **Step 4: Implement the Change**

This is the step where the “changes” will begin to take effect! *Effective Communication* is tantamount to successful implementation, and this step will involve high levels of communication at all levels of the organizational hierarchy.

To that end, there will be continuous progress and performance updates to all involved stakeholders. In MOC cases where there are significant safety implications (such as our example of adding a new runway at an airport), it is particularly important to review the progress and performance of the HIRC from Step 2, as these are critical processes needed to prevent/mitigate accidents and incidents, and can be very dynamic as the project progresses.

Progress reports will be made to the Project Director, and meetings with the Project Manager and stakeholders should be conducted on a regular basis (e.g., daily progress briefs; weekly detailed meetings; quarterly comprehensive updates, etc.).

Continuous communication also needs to permeate the lower levels of the hierarchy. This includes *all* line personnel. Engagement and transparent communication will help to assuage any fears that employees may encounter when organizational changes are occurring. Many people will welcome the benefits of the change, but they need to be assured that the benefits will outweigh the costs. The personal costs (sacrifices) can be high, especially with large, complex projects.

### **Step 5: Monitor and Review**

Once the change has been implemented, monitoring and reviewing will ensure that the MOC deliverables have been achieved and the project is being continuously improved as part of the organization's SMS safety assurance process. Monitor and review should include:

#### **Monitor**

- Ensure that the project deliverables are working-
  - If something is not working as planned, why not?
- Establish and promote safety feedback and reporting-
  - Proactively work to prevent accidents and incidents from occurring in the first place
- Incidents/events-
  - Reactively investigate safety events to determine root causes and to implement effective corrective/preventive actions
- Inspections/audits-
  - To determine the level of compliance/conformity to regulations, procedures, etc.

## Review

- Determine actions needed to continuously improve the project-
    - It is a living project!
  - Measure the success/effectiveness of any actions taken-
    - For example, by the use of safety performance indicators (SPIs) and/or key performance indicators (KPIs)
  - Rectify any immediate causes of substandard performance identified through the review process
- 

Need assistance with the implementation, or a check-up, of your SMS?

TACG can help!



[www.tacgworldwide.com](http://www.tacgworldwide.com)

Need SMS software to simplify your SMS and SRM/MOC processes?

SMS Pro can help!



[www.asms-pro.com/SMS.aspx](http://www.asms-pro.com/SMS.aspx)