

## SMS Implementation at IBERIA Maintenance

*Success keys and lessons learnt (Part-145)*

Presenter: Juan Ramon MATEOS  
Maintenance Safety Officer



EASA - Cologne  
13 November 2018



# Summary

01

Implementing a  
Reporting Culture

02

Success Keys  
towards a Safety  
Culture

03

New Challenges

04

Strategies for  
Safety Report  
Analysis

05

Summary of  
Lessons Learnt

## Implementing a Reporting Culture

# 01

This presentation shows how the reporting culture was developed at IBERIA Maintenance since the implementation of the SMS.


Implementing a Reporting Culture – Initial steps



**SMS development and implementation**  
SMS was implemented at IBE Maintenance in 2009, following off-the-shelf ICAO 9859 SMS framework guidelines



**Training of the Staff**  
All staff (3k) were trained in SMS principles and they were explained how SMS works (theoretically)



**Safety Awareness**  
Different safety campaigns were launched to promote hazard identification through voluntary reporting



.... and the result was ...  
**Less than 20 voluntary reports received per year!**

4 SMS Implementation at IBE Maintenance

**IBERIA**  
MAINTENANCE

SMS was introduced at IBERIA Maintenance in 2009 following the ICAO SMM 9859 2<sup>nd</sup> Edition ([https://www.icao.int/safety/fsix/Library/DOC\\_9859\\_FULL\\_EN.pdf](https://www.icao.int/safety/fsix/Library/DOC_9859_FULL_EN.pdf))

In the SMS framework the 4th component is the Safety Promotion.

Safety Promotion has two elements:

#### 4.1 Training and education

The [organization] shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

#### 4.2 Safety communication

The [organization] shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety-critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

## Implementing a Reporting Culture – Initial steps



### **What we were doing wrong?**

5 SMS Implementation at IBE Maintenance



We realized staff did not relay on the organization to report

Implementing a Reporting Culture – Old wrong way

	<b>Senior/Medium level management</b> Managers were not fully engaged with the SMS principles
	<b>Importance/usefulness of the SMS</b> Safety was not the focus of the maintenance organization
	<b>Safety and Just Culture Policies</b> What was written in the SMM, was not what staff perceived
	<b>Support to the reporters</b> People reporting were supposed informers by peers
	<b>Off-the-shelf guidelines</b> SMS was assembled like an IKEA® furniture without realizing cultural background of every organization/staff is different

6 SMS Implementation at IBE Maintenance

**IBERIA**  
MAINTENANCE

Senior Management was not duly involved in the SMS.

Management felt SMS to be a waste of time and money. Safety investigators were thought as “internal affairs” investigators that, instead of helping organization to produce more and better results, were interfering with the normal way of working with their safety recommendations.

Safety Policies written in the SMS Manual were not perceived by staff in their daily work. Unintentional errors were punished without applying Just Culture principles. During the training sessions staff always asked the same question “Has our manager already received this training?”

Staff were afraid of reporting because this could produce their peers to accuse them of being informers. So they preferred not to report because this could produce them to get into troubles. As an example, the SMS training course was known by staff as the “Informer’s course”.

Some of these problems were not detected during the SMS implementation, because it was done following step by step the guideline without realizing each organization is different, including the cultural background and safety perception of the staff and the management.

## Implementing a Reporting Culture – First Lesson learnt

Safety department cannot pull organization to change its safety attitude **without the Commitment and the Involvement of Management**



Safety department did all the efforts to convince staff to report, but this could not be effective without the support and the engagement of the Senior Management with the SMS.

Success Keys  
towards a  
Safety  
Culture

02



## Success Keys towards a Safety Culture – The Change

“Insanity is doing the same thing, over and over again, but expecting different results.”

In 2016 a new CTO came to IBE with completely new vision and ideas



9 SMS Implementation at IBE Maintenance



We expected Reporting culture to change, but this was not possible while the management was doing the same things.

The only solutions at that point were:

- the senior management to change their safety attitude, or,
- to have new senior management with positive safety attitude.

This last one finally occurred in 2016,

For other organizations in the same situation, management should realize the competitive environment were they work and the safety to be one of their priorities, not as a waste of time and resources, but a way to be the best in the class.

Success Keys towards a Safety Culture – The Keys

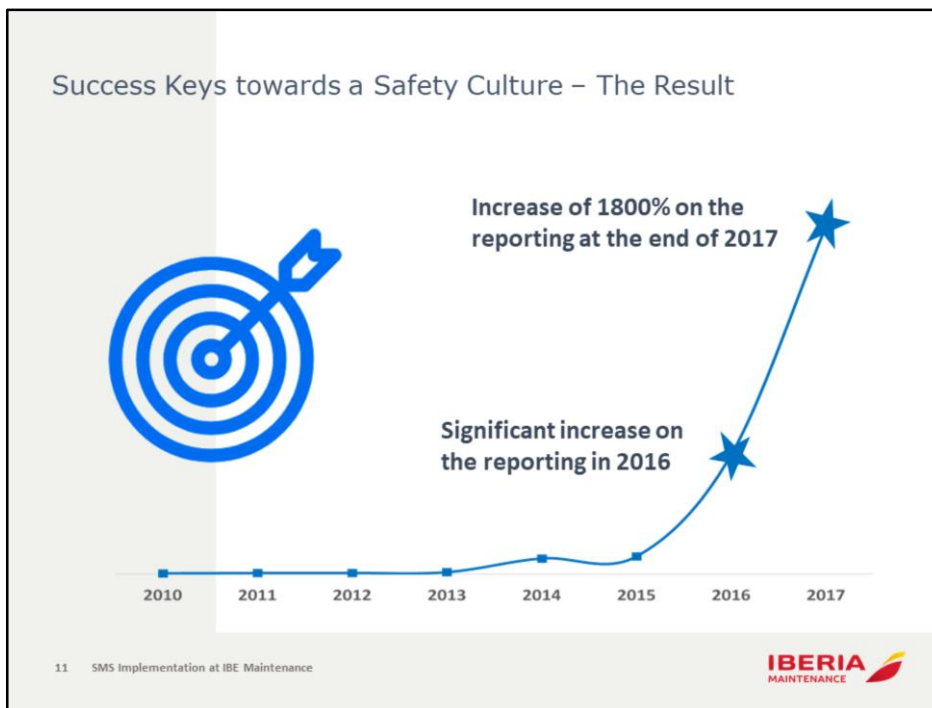
	<p><b>Senior/Medium level management</b>          Senior Management is fully involved in the SMS and they are the main safety promoters.          Investment in additional training, introducing an apprenticeship scheme and Production Trainers.</p>
	<p><b>Safety as a priority for business</b>          Safety has become a priority in the maintenance organization behaviour, establishing “Fly Safe” principle as a basis</p>
	<p><b>Safety and Just Culture Policies</b>          Safety is perceived by staff as essential in their daily work.          They are no longer afraid of reporting any issue</p>
	<p><b>Staff is awarded when reporting</b>          Safety reporting is part of the KPI used to calculate bonus for staff. Relevant reports are recompensed</p>

10 SMS Implementation at IBE Maintenance

**IBERIA**  
MAINTENANCE 

Now things have significantly changed :

- All management levels are driven to be engaged with the safety principles. Senior Management have also impulse, as part of their engagement with safety, to made big investments on training to improve the knowledge of the people, to change the attitude of the staff towards safety with the apprenticeship school, and to provide support for any difficult that technicians could find in their daily work with the Production Trainers.
- Any meeting, daily briefing, communication... starts always with safety as the first subject. It has become a priority with the lemma “Fly Safe”
- Safety and Just Culture are not only policies written in the SMS manual. Staff feel all the management levels are involved and they are continuously encouraged by their managers to report any abnormal/unsafe situation they could detect
- Reporting is also consider an essential part of the business and staff is recompensed because of the reporting level



All these changes have produce a tremendous change on the reporting culture, increasing the number of yearly reports to such figures that we could never have expected before

Success Keys towards a Safety Culture – The End



**End of the story?**

12 SMS Implementation at IBE Maintenance

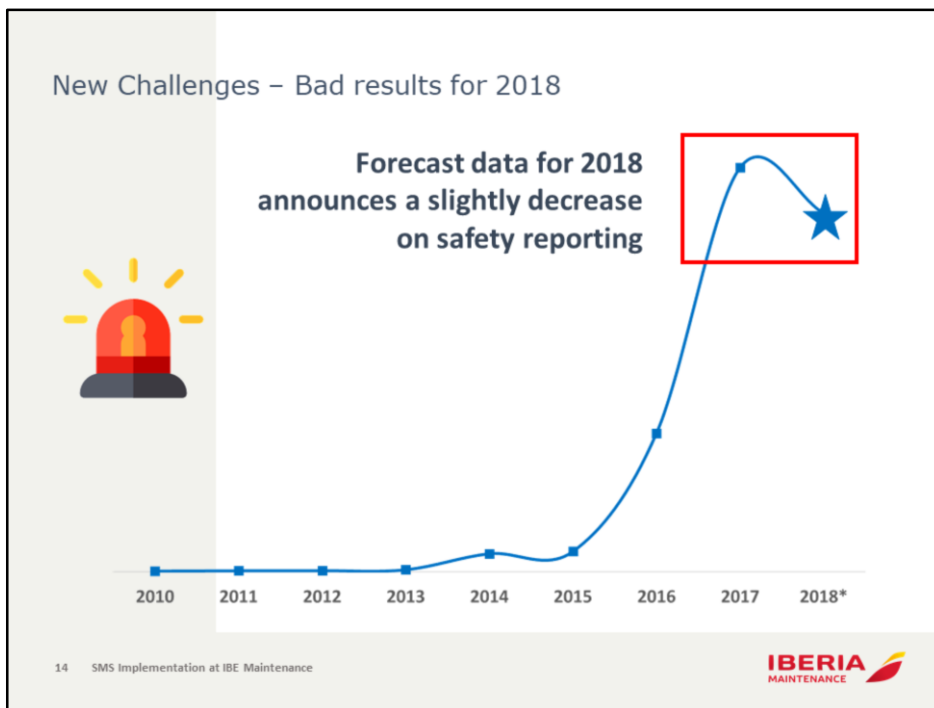
**IBERIA**  
MAINTENANCE 

Have we already got the desired level of reporting culture?

## New Challenges

03

13 SMS Implementation at RE Maintenance



Unfortunately, reporting trend shows a decrease in the reporting level for this 2018

New Challenges – Problems identified



**Reports open for long time**  
Safety department was not dimensioned to manage so many reports, giving priority to high risk reports. Reports assessed as low-risk cannot be dealt with in a timely manner



**Repetitive reports / Effectiveness Monitoring**  
When mitigations actions are adopted, it is difficult to monitor if all of them were effective enough. In case of repetition, reporters feel SMS is not taken their reports seriously



**Missing/Inadequate/Late feedbacks**  
Expectations of reporters on receiving a personalized answer to his report in short period of time cannot be easily satisfied, making them frustrated with the reporting system

15 SMS Implementation at IBE Maintenance

**IBERIA**  
MAINTENANCE

How is it possible that all the euphoria of the staff is decreasing?

We created great expectations for the staff when reporting, that we are not really satisfying.

People who report expect, basically:

- Feedback to be received in a short time after report is sent
- Feedback containing all the mitigation actions put in place
- Mitigation actions to be effective, so the problem has completely disappeared

Current situation is that such big amount of reports is difficult to be managed in a timely manner and this produce that we are not providing an adequate feedback to the staff.

The immediate consequence is staff to start loosing the confidence in the SMS, and this could have severe effects.

New Challenges – Problems identified



**Do we accept?**

16 SMS Implementation at IBE Maintenance



We cannot accept this situation as is and we have to work to change it



Strategies for  
Safety Report  
Analysis

04



To produce better feedbacks for staff we need to develop strategies to analyze such amount of reports in an effective manner.

Three examples of report analysis have been explained:

- Risk Based reports classification
- Content Based reports classification -> Clustering
- Improvement of the Preventive reporting

Strategies for Safety Report Analysis – Risk Based analysis				
↓ RI Input*	Priority	Investigation	Feedback	→ Outputs
<b>Acceptable</b> RI < 9	1y	Not required Logged for statistics	Automatic / non personalised simple message. Safety Campaigns	Safety Analysis Statistics
<b>Low Risk</b> $9 \leq \text{RI} < 20$	3m	Cluster based Investigation	Personal feedback based on <b>cluster</b> analysis results	Cluster Analysis Quarterly Safety report <i>Fly Safe Magazine</i>
<b>Medium Risk</b> $20 \leq \text{RI} < 25$	1m	Event based Investigation	Personal feedback based on the <b>event</b> investigation results	Event Investigation Report Safety Action Group Quarterly Safety report Reviewed by Form 4
<b>High Risk</b> $25 < \text{RI}$	1w	Complete RCA detailed Investigation	Reporter invited to collaborate in the investigation	Event Investigation Report Safety Action Group Quarterly Safety report Reviewed by Form 4

\* NOTE: RI (Risk Index) according to 5x5 Risk Matrix in Appendix

This slide explains the different feedback and outputs depending on the risk level.

This strategy results effective to assign the priority and determine the required level of investigation in order to speed up the answers to the reporters.

## Strategies for Safety Report Analysis – Cluster based analysis



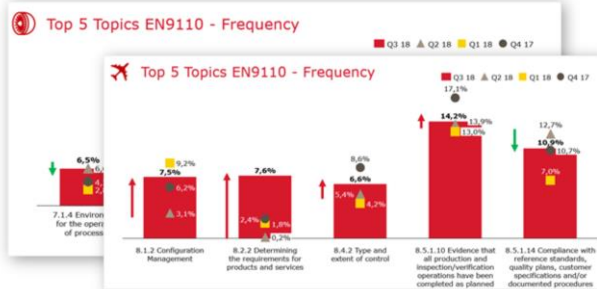
### 1. Select a taxonomy to classify the reports

Might be an existing taxonomy (e.g. ECCAIRS) or you can use the chapters of an official standard (e.g. EN9110) or regulation (e.g. Part 145)



### 2. Classify and cluster each report with the applicable chapter

Reports should be classified according to the subject (contents). Each chapter determines a different cluster in order to produce the Pareto diagrams



20 SMS Implementation at IBE Maintenance



This is likely one of the best ways to analyze big amount of reports, instead of trying to perform an independent investigation for each report received.

Action plans are established for the most contributing clusters.

This analysis should not be understood as KPI because the groups (clusters) can change from one quarter to another.

## Strategies for Safety Report Analysis – Promote Preventive

### Criteria to identify a Preventive report

1. Reported event did not happen yet, and
2. Identifies high risk situations, or
3. Identifies mid risk repetitive issues, or
4. Affects to different stations/units

### Advantages of aiming Preventive Reporting



#### To Improve the safety barriers

Hazards are identified before producing adverse consequences affecting flight safety, customers or producing high poor quality costs



#### To Stop firefighting way of working

Organization has more time and information to work on building preventive actions, better than being thinking on contingency and corrective plans



#### To Reduce the number of irrelevant reports

Staff is encouraged to raise reports which identify relevant issues.  
Time consuming negligible reports are significantly reduced

Goal of safety reporting is to identify hazards before they produce adverse consequences.

This is typically a mature SMS state where the staff have fully awareness of the importance of preventive actions instead of reactive ones.

For the safety analysis this should contributive

- Have less safety reports, because hazards are analyzed before being evident
- Concentrate the investigation efforts on preventive, not just running every time a new event occurs
- Receive more valuable reports related with relevant issues

## Summary of lessons learnt

# 05

22 SMS implementation at IBE Maintenance

## Summary of lessons learnt – Final Tips



### **Senior Management Commitment**

Safety is an attitude, not just words and good intentions written in a SMS manual. Management should actively demonstrate their commitment and support to Safety



### **Keep it simple and transparent**

SMS is not rocket science. Show how it works. If staff cannot understand the aim of the SMS, it will be difficult to apply it



### **SMS is not copy-paste or taken from a manual**

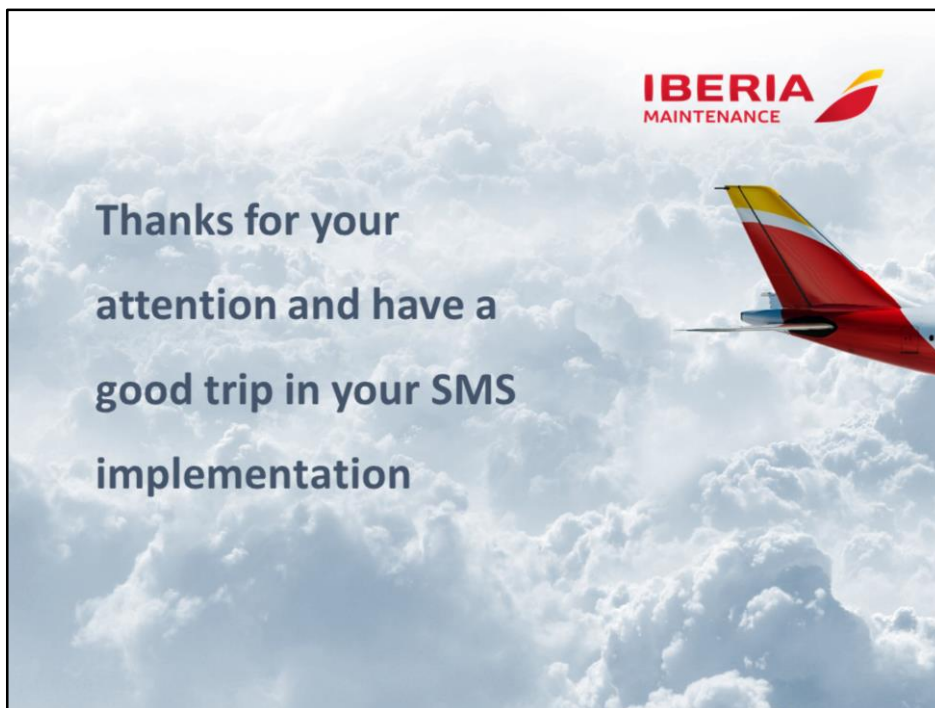
SMS should be developed by the individuals in the company based on the tasks/work they do, and adapted to them



### **Continuous improvement towards predictive**

SMS can be always improved. Try to think out of the box into imaginative ways of hazards identification and data analysis that could bring you to a predictive SMS

Final Tips to summarize the presentation



Farewell



Appendix

XX

### 5x5 Risk Matrix used to calculate RI (Risk Index)

Risk Probability	Risk severity				
	Catastrophic	Dangerous	Major	Minor	Negligible
	A 5	B 4	C 3	D 2	E 1
Frequent 5 9	5A 45	5B 36	5C 27	5D 18	5E 9
Occasional 4 7	4A 35	4B 28	4C 21	4D 14	4E 7
Remote 3 5	3A 25	3B 20	3C 15	3D 10	3E 5
Improbable 2 3	2A 15	2B 12	2C 9	2D 6	2E 3
Extremely Improbable 1 1	1A 5	1B 4	1C 4	1D 2	1E 1

Example of the 5x5 Risk Matrix used for Risk Assessment