



# EASA

European Aviation Safety Agency

## Objective of the workshop: why CRM?

CRM Workshop – *CRM in practice*  
Cologne, 8 November 2016

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Safety Management Team Leader

### Your safety is our mission.

An agency of the European Union 

TE.GEN.00409-001



# The SRM Process



1. Identification  
of Safety Issues

2. Assessment of  
Safety Issues

5. Safety  
Performance

## Why CRM?

4.  
Implementation  
& Follow-up


3. Definition and  
Programming of  
Safety Actions








# The SRM Process




		COMMERCIAL AIR TRANSPORT - AEROPLANES										
Outcome Percentage of Fatal Accidents (2006-2015)		11			64%	45%	27%	18%	18%	9%	0%	0%
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<div> Safety Issues</div>		Total number of occurrences in 2011-2015 per safety issue			Key Risk Areas (Outcomes and precursors)							
		Incidents (ECR data)	Serious Incidents	Total Accidents	Fatal Accidents	Aircraft Upset in Flight	System Failure	Ground Collisions and Ground Handling	Abnormal Runway Contact and Excursions	Terrain Conflict	Runway Incursions	Fire
Operational												
Detection, Recognition and Recovery of Deviation from Normal Operations	569	22	12	2	•		•	•	•	•		
Operation in Adverse Weather Conditions	9,209	37	33	1	•	•	•	•	•	•		•
Ground Handling Operations	10,697	8	7	1	•		•	•	•	•	•	•
Maintaining Adequate Separation Between Aircraft on the ground and in the air	10,001	43	8	—	•	•	•					•
Pre-Flight Preparation/ Planning and In-Flight Re-Planning	2,535	7	2	—	•		•	•	•	•		•
Aircraft Maintenance	1,318	7	1	—	•	•	•	•	•	•	•	•
Fuel Management	30	9	—	—	•	•			•			
Birdstrikes	11,421	3	—	—	•	•	•	•			•	
Calculation and Entry of Take-Off and Landing Parameters into Aircraft System	3	3	—	—	•		•	•				
Handling and Execution of Go-Arounds	2	4	—	—	•			•	•			•
Prevention and Resolution of Conflict with Aircraft Not Fitted With Transponders	95	2	—	—								•
Dangerous Goods Handling	4	—	—	—			•				•	
Technical												
Handling and Operation of the Aircraft Following a Technical Failure	564	15	12	1	•	•	•	•	•	•	•	
False or Disrupted ILS Signal Capture	202	4	—	—	•			•	•			
Contamination of Controls or Critical Surfaces	177	2	—	—	•		•	•			•	
Damage Tolerance to RPAS Collisions	6		—	—	•	•		•			•	•
Consequences												
Suitability of Recording Devices	19	3	5	2	•	•		•	•	•	•	•
Survivability and Evacuation	18	2	6	1	•	•	•	•	•	•	•	
Human												
Personal Readiness and Crew Impairment	1,718	40	1	1	•	•	•	•	•	•	•	•
Flight Crew Perception and Awareness/ Decision Making and Planning	34	11	5	—	•	•	•	•	•	•		•
CRM and Communication	3,083	17	5	—	•	•	•	•	•	•	•	•
Monitoring of Flight Parameters and Automation Modes	—	5	—	—	•		•	•	•			•
Knowledge of Aircraft Systems and Use of Associated Procedures	—	2	—	—	•	•	•	•	•	•	•	•
Organisational												
Implementation of Reporting Systems and Safety Management	—	2	—	—	•	•	•	•	•	•	•	•
Oversight of Organisations	—	—	—	—	•	•	•	•	•	•	•	•

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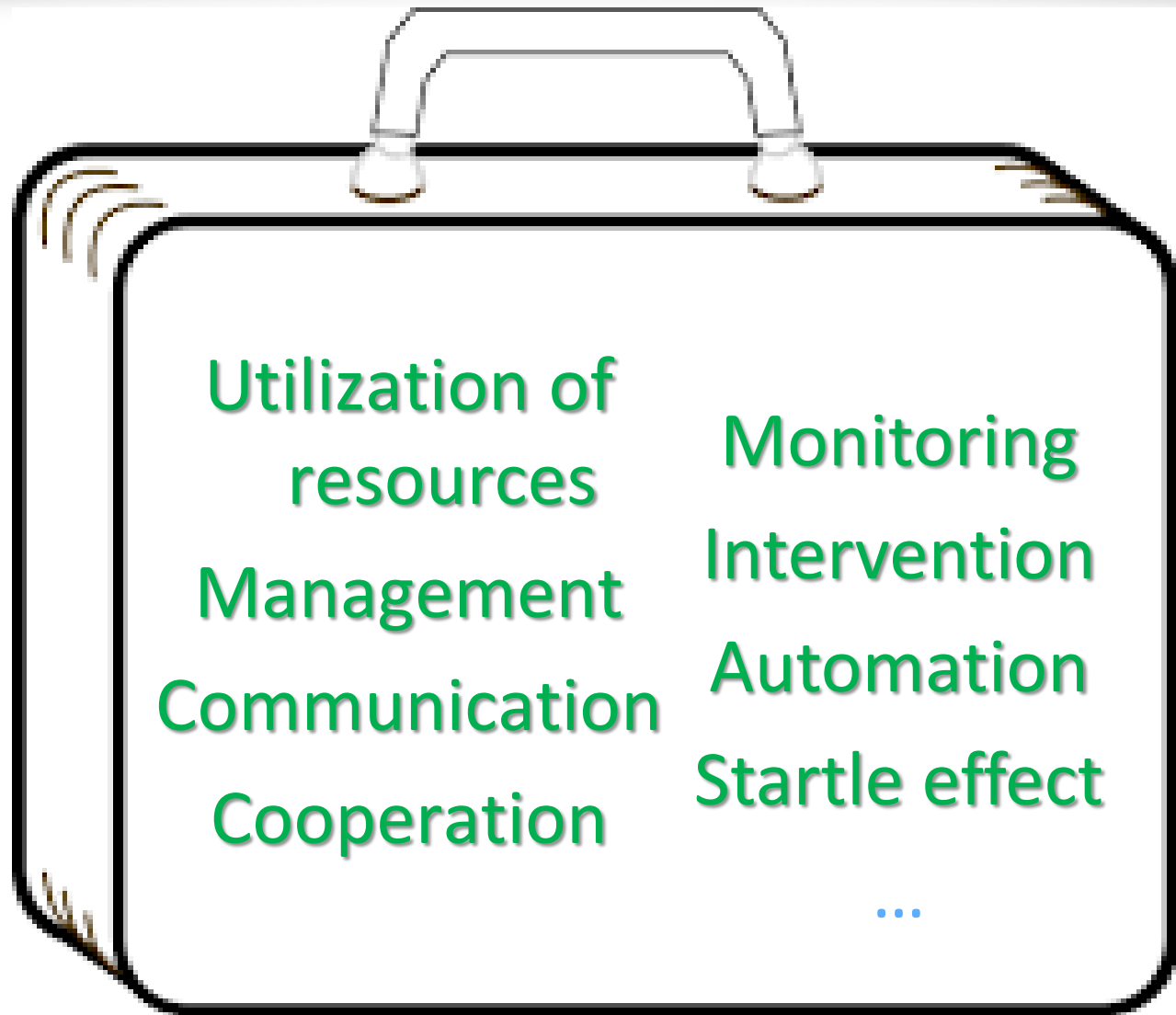
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A breakdown of CRM can have an impact on any risk area

Top contributor to Aircraft Upset and Runway Excursions



# The CRM bag...



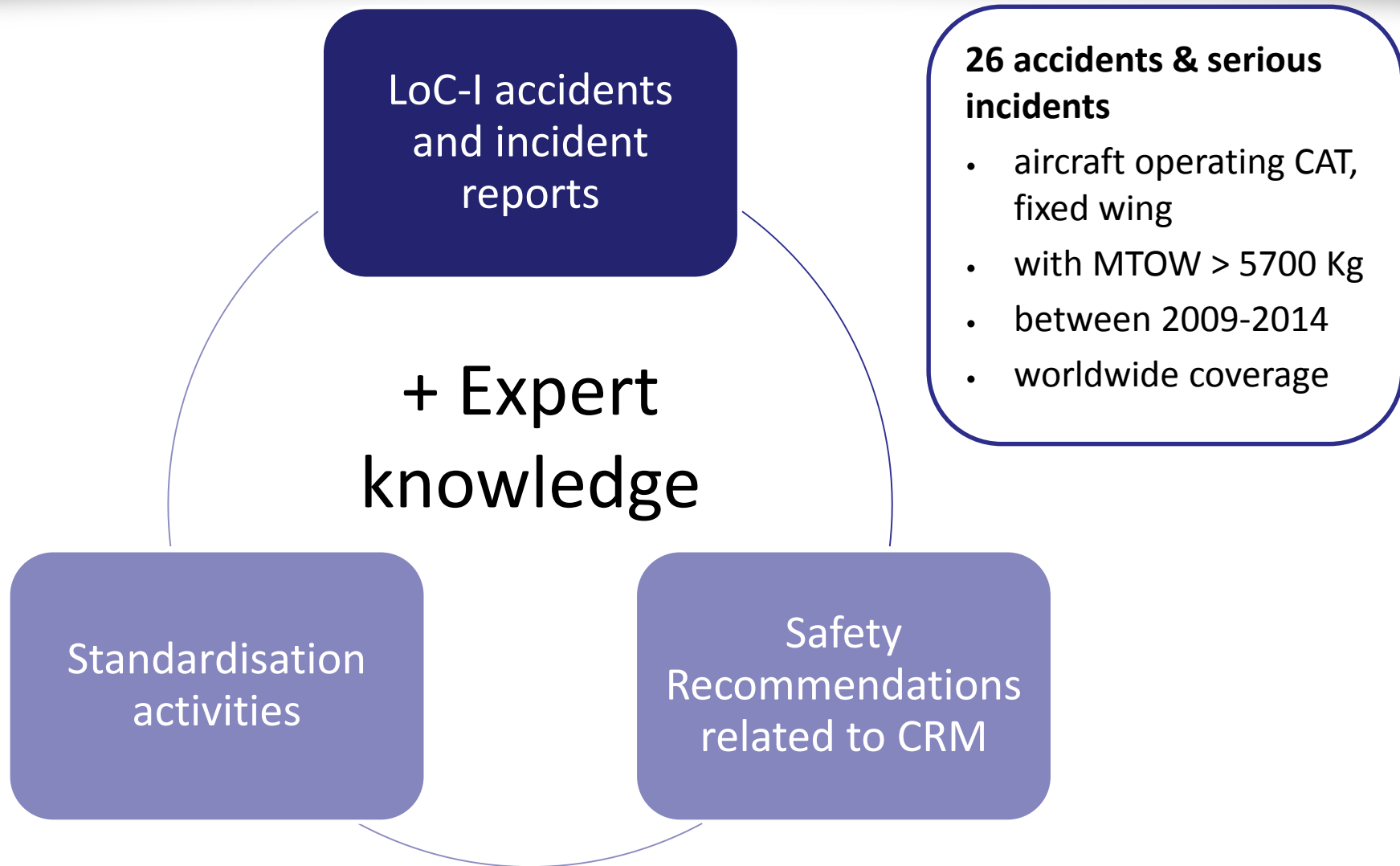


# The SRM Process



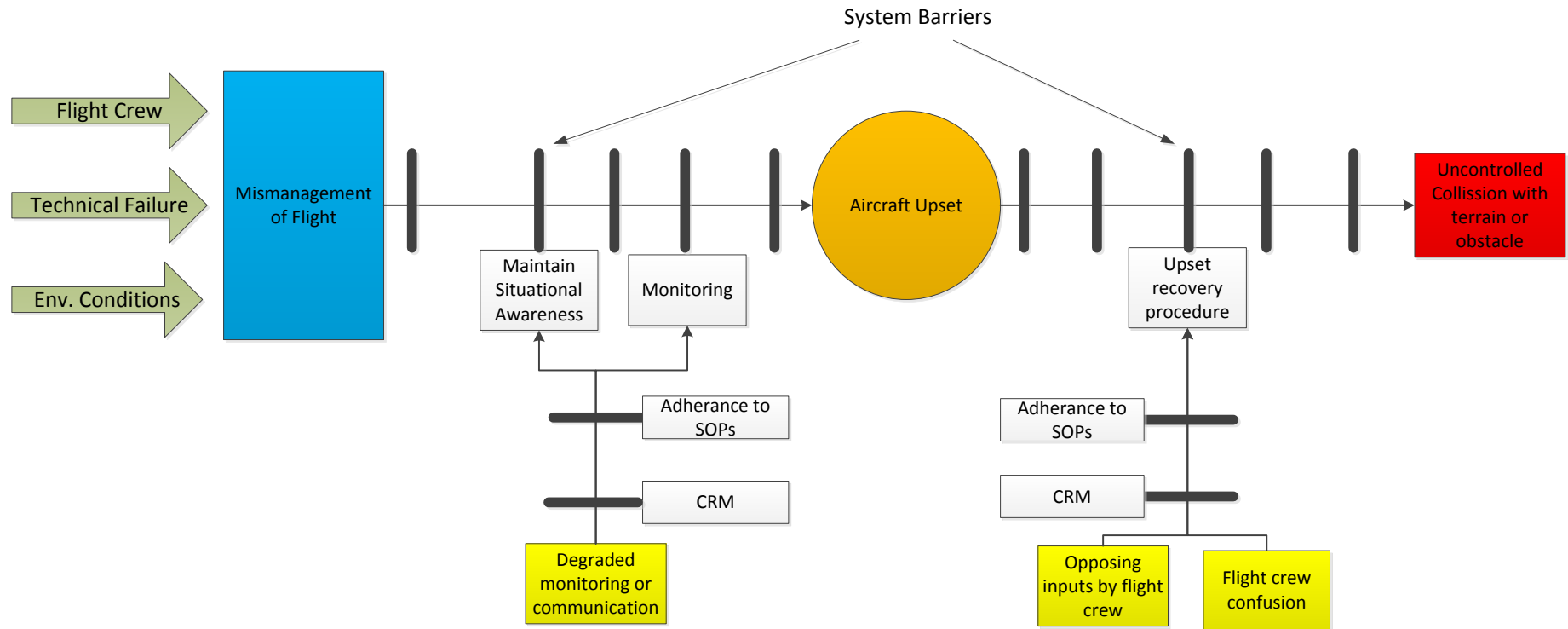


# Assessment of the safety issue





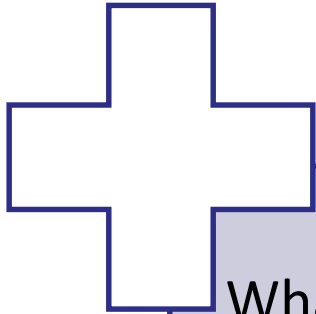
# The LOC-I scenario



A breakdown of CRM leads to activities not performed or not performed to a safe standard by flight crews



# First analysis results



## What we know

- Accidents predominant outside EU
- Serious Incidents predominant inside EU
- Mainly a contributing factor to the events
- Mostly on approach

## What we do not know

- Not much information about CRM training in investigation reports
- Number of accidents that were prevented due to good CRM is not known.
- There is variability in the identification of CRM aspects during investigation (in many cases missing)





# CRM related aspects





# Standardisation Findings on CRM

## Competent Authorities



### Approval and oversight of flight crew training and checking by CA:

- OPS Findings linked to an inadequate verification of compliance before issuing approvals or to an inadequate verification of continued compliance.
- In several cases, CRM was explicitly mentioned as one of the elements not adequately verified in operators' operations manuals, such as:

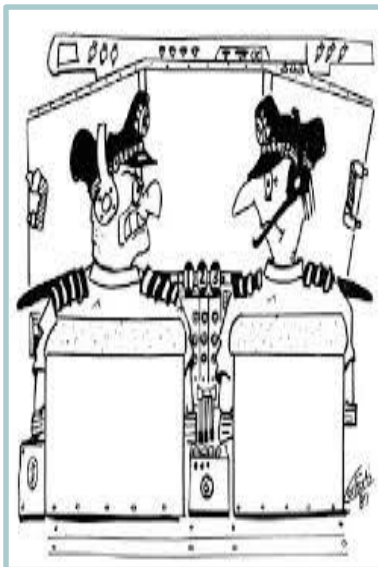
Legal Basis	Finding Text
<b>ARO.GEN.310</b>	<p>When sampling operations manuals, it was identified that, despite the use of a comprehensive check-list, a thorough review of the operations manuals had not been performed, as evidenced by [...] the following: [...]</p> <p>- For 3 out of the 4 sampled operators, the methodology for the assessment of CRM skills was missing; [...]</p>





# Standardisation Findings on CRM

## Undertakings



Standardisation inspections may include inspections of undertakings.

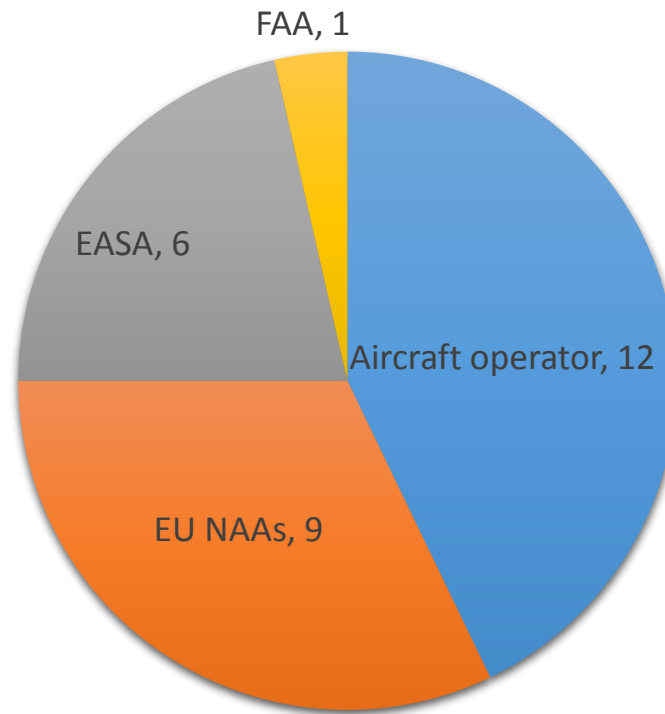
- Not a full verification of the compliance status of the undertaking

Legal Concatenated	Basis	Finding Text
<b>ORO.FC.115, ORO.FC.215, ORO.FC.230</b>		Reviewing the CRM training it was identified that the description of the methodology of CRM skills assessment did not include an agreed terminology (common expected behaviours) to ensure uniform assessment standards.
		Reviewing the CRM training the following non conformities were identified: <ul style="list-style-type: none"><li>- No detailed description of the methodology of CRM skills assessment was published in the operations manual,</li><li>- Line checkers were not trained in the assessment of CRM skills,</li><li>- No procedures were established to update the CRM recurrent training programme over a period not exceeding three years taking into account the de-identified results of the CRM assessments of crews.</li></ul>



# Safety Recommendations related to CRM

SR explicitly wording CRM  
(CAT FW, 2011-2015)



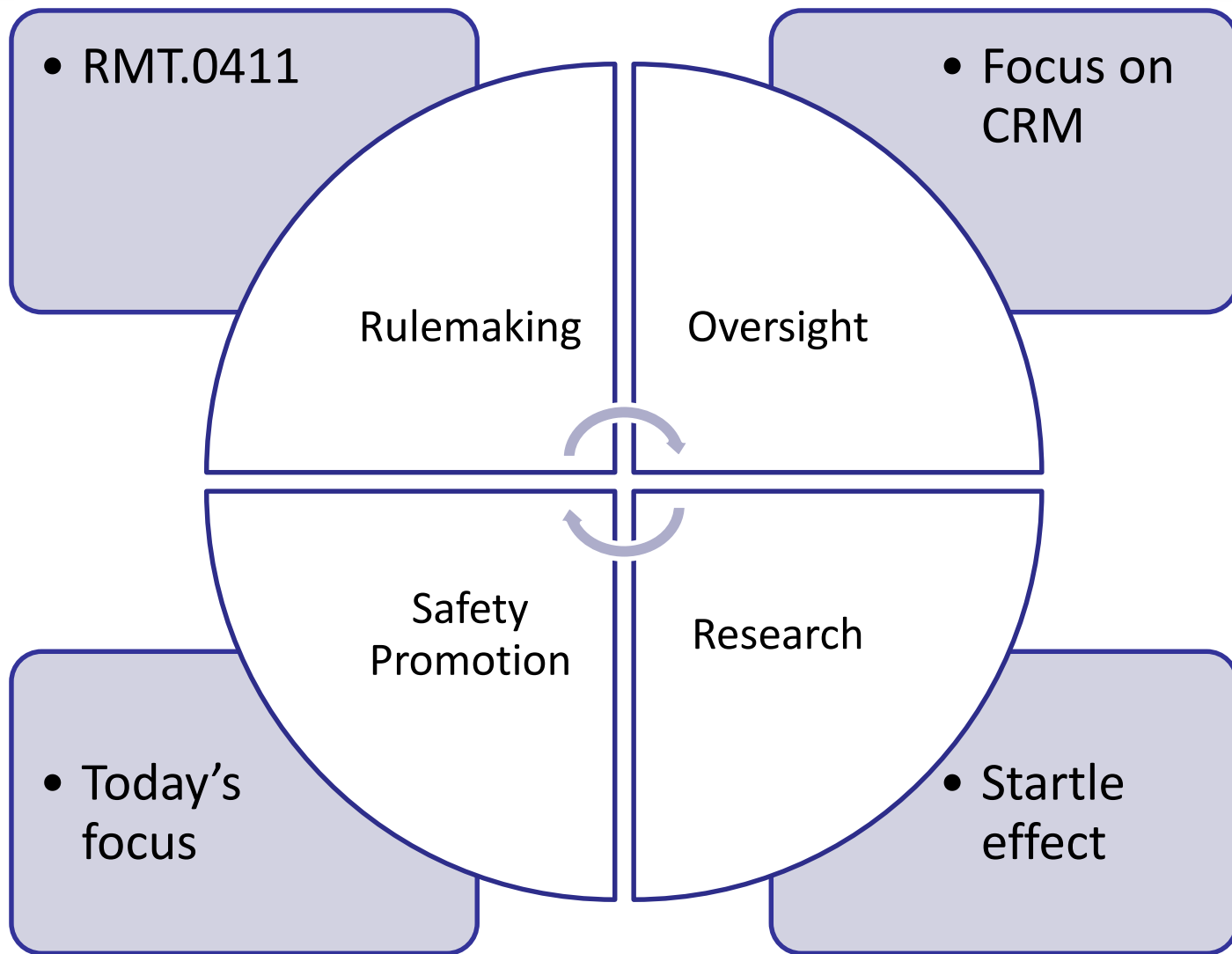
- Update regulatory provisions on CRM
- Inadequate inspection of CRM training by the NAAs

- Reinforce CRM training and evaluation
- organisational culture influence on crew member performance
- assertiveness and leadership skills by flight crew



# The SRM Process







# The focus of today

How does CRM work in practice?



What works well?



How do you know?



What can we share with others?



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# Thank you for your feedback

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