

# SAFETY INVESTIGATION MANAGEMENT: OPPORTUNITIES FOR IMPROVEMENT

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# Safety Investigation



Air Accident investigation is a process conducted for the purpose of accident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and/or contributing factors and, when appropriate, the making of safety recommendations (ICAO, Annex 13)



# Project



A project is a temporary endeavour undertaken to create a unique product, service, or result.

The temporary nature of projects indicates that a project has a definite beginning and end.



# Aim of the study



## Safety Investigation = Project

Could safety investigations benefit from project management principles?



# Methodology (1/2)



1. Listing of the areas and activities mentioned in the PMBOK 5<sup>th</sup> edition (PMI, 2013).
2. Gap analysis between PM areas/activities and ICAO Annex 13, Doc 9756 (2015) and USAF AFI 91-204 (2017).
3. Grouping of the PM areas/activities into 48 items according to the extent of their reference in ICAO and USAF documentation.

# Methodology (2/2)



4. The 48 PM areas/activities were transferred to the context of safety investigations
5. Administration of questionnaire to examine:
  - ✓ The existence of these areas/activities in civil and military aviation safety investigation standards used by participants
  - ✓ The degree the specific areas are (or could be) useful for safety investigations
6. Collection of data: 32 participants

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# QUANTITATIVE RESULTS



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## Most frequent areas/activities in investigation standards



**St 1.** There is a document that formally initiates an investigation and authorizes the investigator in charge to use the available resources to perform the investigation (96,9%).

**St 27.** There is a process for the submission and acceptance of the investigation report (96,8%).

**St 46.** All investigation data, files, reports, documents etc. are collected and maintained for future use (96,8%).



## Least frequent areas/activities in investigation standards

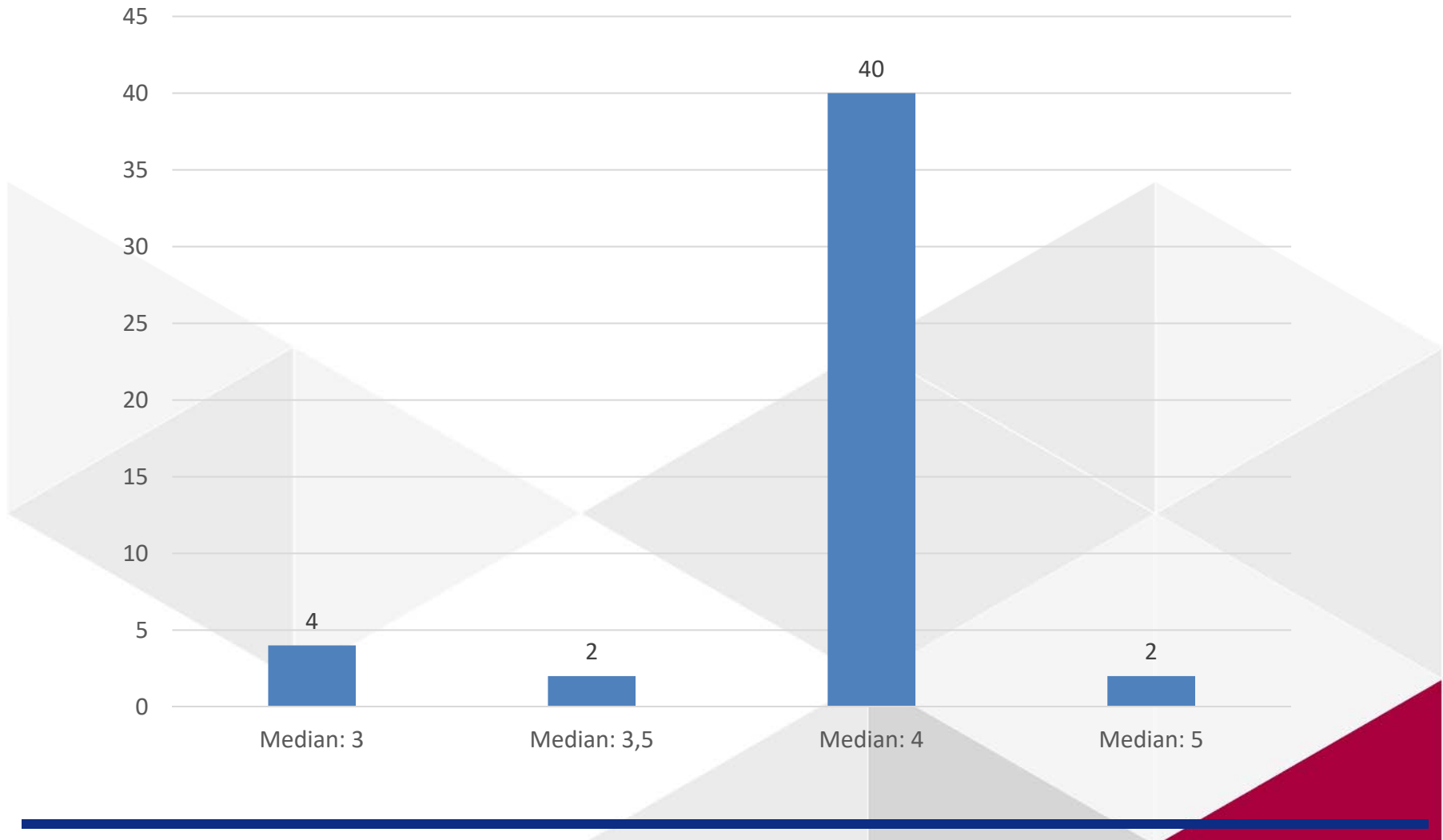


**St 33.** Reports are submitted periodically for the schedule and cost performance of an investigation (9,7%).

**St 14.** There are rewards and recognition for investigation team members who performed beyond the defined investigation quality requirements (12,9%).

**St 24.** Each work package is monitored across all of its characteristics (e.g., scope, costs) (16,1%).

# “How useful is or could be for the investigation teams?”





**St 14.** There are rewards and recognition for investigation team members who performed beyond the defined investigation quality requirements.

**St 32.** The investigation costs are planned and controlled through specific units, limits, techniques etc.

**St 33.** Reports are submitted periodically for the schedule and cost performance of an investigation.

**St 44.** Details about approved and rejected changes are kept in a logbook.

# Usefulness: Extremely



**St 46.** All investigation data, files, reports, documents etc. are collected and maintained for future use.

**St 47.** All lessons learned from an investigation are collected and maintained for future use (management of the investigation scope, other problems, and causes, variances, solutions etc.).

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# QUALITATIVE RESULTS



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**St 2. There is a central document (investigation plan) that describes how the investigation will be executed, monitored, and controlled. It refers to the management of scope, schedule, cost, requirements, quality, human resources, communications, risks, procurement, and stakeholders. It is updated when required.**

- **Resistant:**
  - Little practical implementation
  - Investigation manual needs to be simple
- **Concerned/neutral:** Update depends on organizational safety culture
- **Positive:**
  - Investigation manuals could be more elaborate
  - Inclusion of quality checks are useful



**St 6. Indicative or suggested methods and techniques (to be) used during an investigation are documented.**

- **Resistant: Just for compliance, it will not be followed in practice**
- **Concerned/neutral:**
  - It is by experience and very subjective
  - General methods are described
  - Methods and techniques need periodical update
  - There is no need to be documented as I am currently the sole active investigator in the organization



**St 12. The Investigator in Charge maintains and improves team cohesion, effective collaboration between members etc.**

- Concerned/neutral:
  - It depends on who is the IIC
  - It requires negotiation through senior management
- Positive/current practice:
  - Would be useful
  - Daily briefing ensures team management
  - This works within our department



# Main conclusions

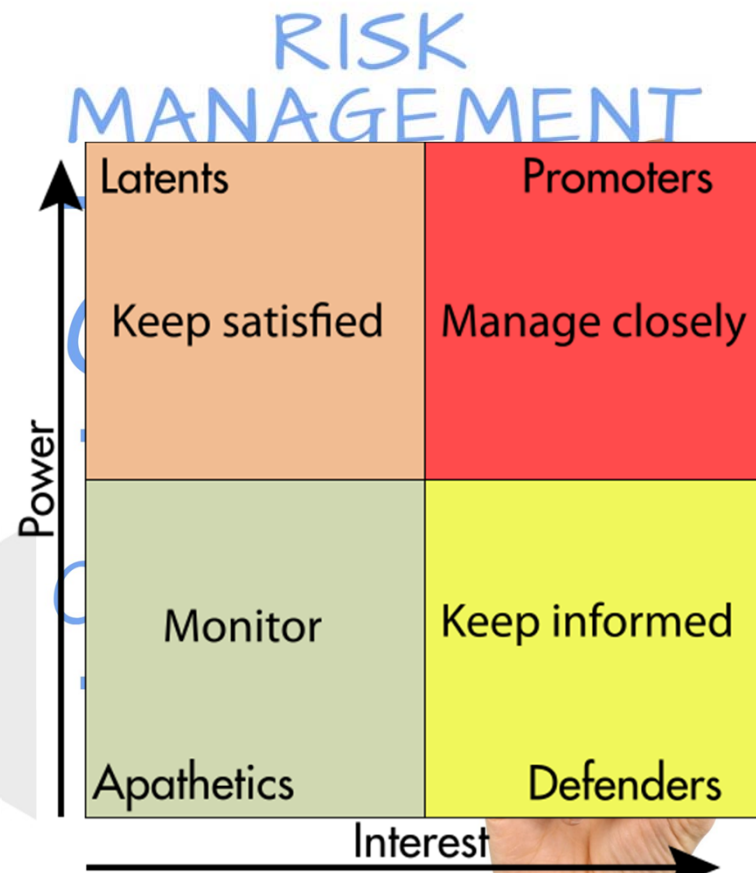


- Safety investigations have characteristics similar to a project.
- Project management areas/activities are not consistently mentioned in the indicative but representative safety investigation standards of ICAO and USAF.
- The frequencies of project management areas/activities in regional/local standards currently in use varied from about 10% to 97%.
- The vast majority of project management areas/activities were perceived as “very useful”.

# Least represented areas



- Risk management of the investigation process
- Quality management of the investigation process and deliverables
- Communications management
- Stakeholders management



# Recommendations



- The areas and activities of project management can be used to support safety investigations.
- These areas/activities must be seen as means to help investigators and not to increase bureaucracy.
- Similar gap analyses and surveys to customise the inclusion of project management areas/activities in safety investigation standards.
- Investigation management document must be separate from the investigation manual, but linked to it.
- Basic project management knowledge can be included in safety investigation training, especially for persons who are appointed as Investigators in Charge

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Thank you!

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CREATING TOMORROW

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