



# HUMAN FACTORS



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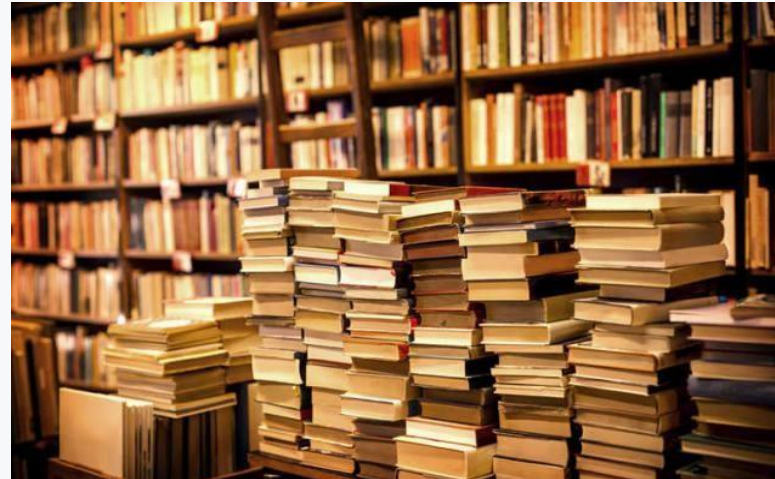
# HUMAN ERROR

**"HUMAN ERROR IS INEVITABLE..."**

**LEIMANN PATT**

# BIBLIOGRAPHY

- **Human Factors Instruction Manual - ICAO**
- **Human Error – JAMES REASON**
- **CRM. An Operational Philosophy - LEIMANN PATT.**
- **Human Factors in Aviation – Dr OCTAVIO AMÉZCUA PACHECO.**
- **Operational Safety Management Manual – ICAO.**
- **FFHH/CRM/TEM Facilitator Course Presentations**
- **PRIVATE JETS SA.**



# OBJECTIVES

- **That the student understands that to err is human.**
- **That the student differentiates between accident and incident.**
- **Have the student observe the differences between acting in a different way.**
- **reactive and proactive.**
- **Based on everything learned during the training cycle, recognize the benefits of implementing this knowledge in daily operation.**



# SYLLABUS

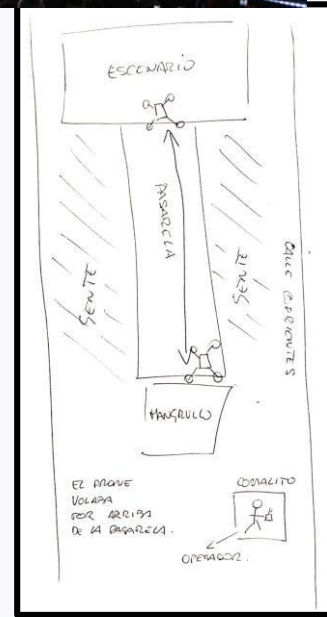
- **Accident at the San Martin Theater.**
- **What is human error?**
- **Evolution and classifications of error.**
- **Accident and incident.**
- **Error management – basic concept**
- **Conclusion.**



# ACCIDENT AT THE SAN MARTIN THEATER

## (Accident in the drone world)

- 27 - May - 2017 Buenos Aires, Argentina.
- 1 MAVIC PRO.
- 1 person with mild head trauma.
- During the end of the festivities, streamers were thrown.
- Probability of rain, at night (8:10 p.m.).
- Inauguration of the San Martin Theater, on Corrientes Street with more than 1500 people present.



# HUMAN ERROR

ON THE ROAD TO SUCCESS,  
THERE ARE NO SHORTCUTS.

OUR MOST  
VALUABLE  
RESOURCE SITS  
63 FEET AHEAD.

C24D

# WHAT IS THE UMAN **ERROR**?

**"Involuntary deviation in relation to reference agreed upon as correct"**

**"Unintentional deviation in the actions planned to achieve a certain objective sought"**

**But according to what we could see... We can say that it is:**

**A systemic fact.**

**A symptom, where the cause must be sought beyond the person himself.**

**A consequence of the failure of the system.**



# WHAT IS THE UMAN **ERROR**?

So knowing and recognizing that to err is human and is somehow inevitable...

So what can we do?



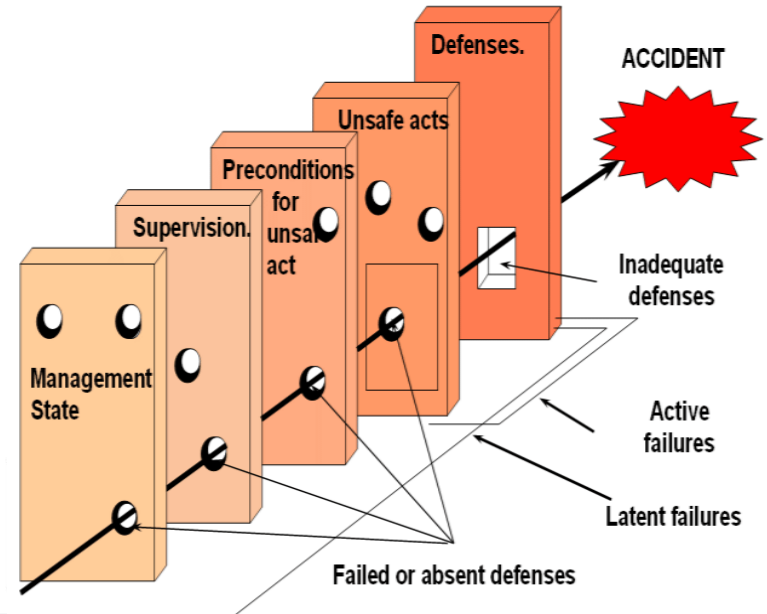
# WHAT IS THE UMAN ERROR?



**COUNTERMEASURES**

**PLACE BARRIERS**

JAMES REASON CUASATION MODEL



# WHAT IS THE UMAN **ERROR**?

## ERROR AND SITUATIONAL AWARENESS

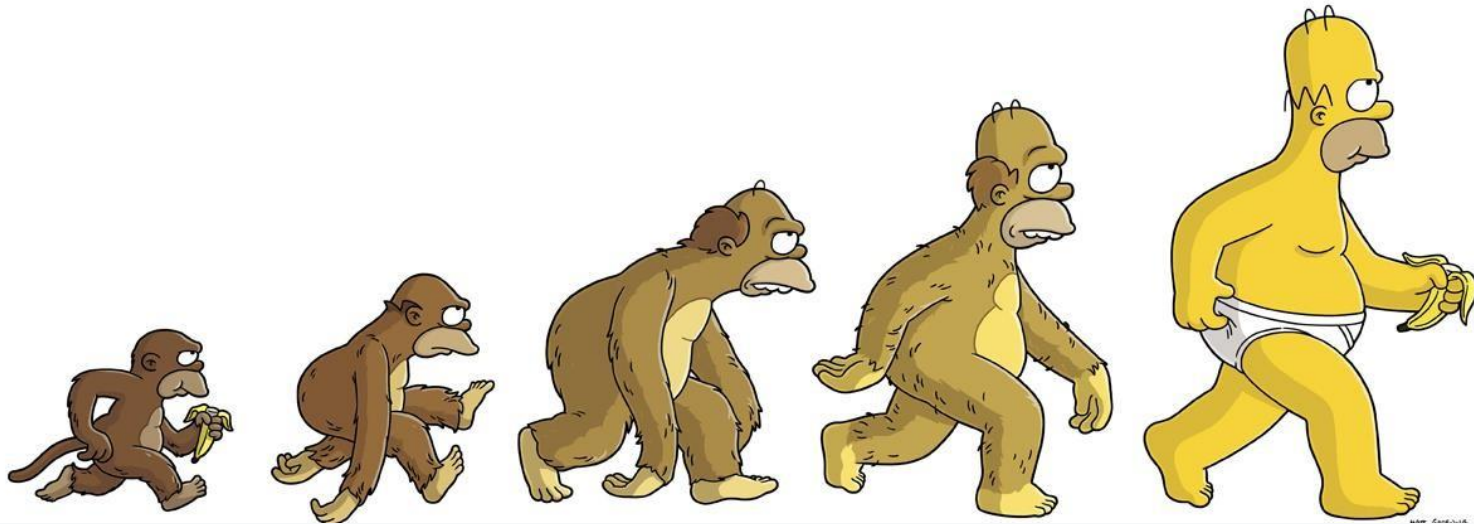


# EVOLUTION OF THE ERROR

1. Pilot error

2. Crew error

3. Systemic fact



# ERROR CLASSIFICATIONS

According to Professor Hollnagel



- **OBSERVATION ERROR.**
- **ERROR** of interpretation.
- **PLANNING ERROR.**
- **EXECUTION ERROR.**

# ERROR CLASSIFICATIONS

**INTENTIONALITY**

**¿MISTAKE OR VIOLATION?**



**Habitual**

**Exceptional**



# ACCIDENT OR **INCIDENT**

**ACCIDENTED: VANT** →

Ready to move with intentions of a flight until it turns off engines after it.



- Fatal or serious injuries.
- Structural damage or breakage.
- Disappears or is totally inaccessible.

**INCIDENT: VANT** →

It is not an accident but it affects the safety of operations.

# ACCIDENT OR INCIDENT

## ACCIDENT



## INCIDENT



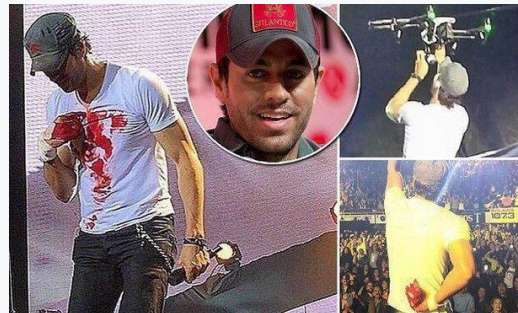
## INCIDENT



## INCIDENT



## ACCIDENT



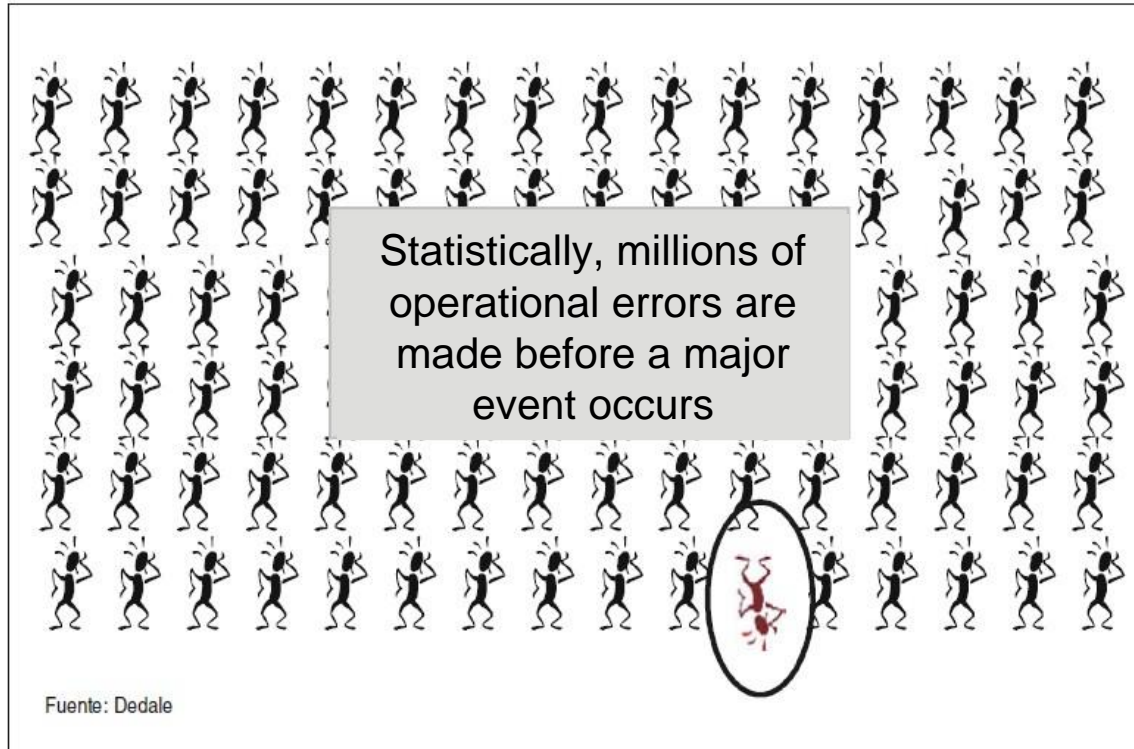
## ACCIDENT



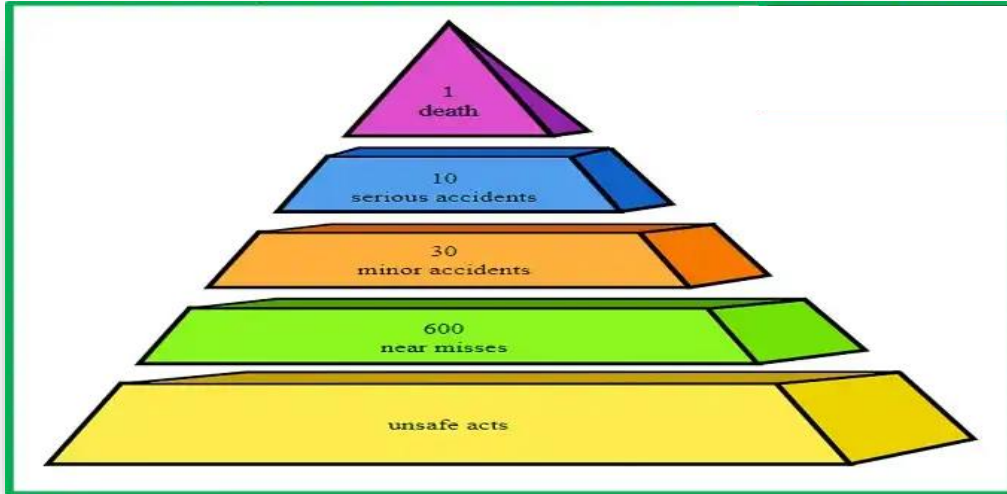
Vicky   
@vickyutf

Un Drone impactó con un avión de Aerolíneas Argentinas LV- GKS

# HOW AND SINCE WHEN SHOULD WE MANAGE **ERROR**?



# HOW AND SINCE WHEN SHOULD WE MANAGE **ERROR**?



## Proactive Problem Management

Proactive problem management is concerned with locating and resolving problems and acknowledging errors before more incidents connected to them may happen. The proactive approach is driven by consistent developments and enhancements in solving the problem.

## Reactive Problem Management

Reactive problem management acts only when the incident has already happened to resolve the problem. The process of reactive problem management gets initiated when incidents occur, demanding an underlying root cause inquiry.

# CONCLUSION

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**THANK YOU VERY MUCH  
FOR YOUR ATTENTION!!**