



# *Managing Safety* *at IndiGo*

*Capt Dhruv*  
*Chief of Safety*

# Largest Indian Operator- IndiGo



## IndiGo Fleet Information

No. of Aircrafts  
131

No. of Flights  
876

Domestic Stations  
38

International  
Stations  
6





There is no 99.99% in  
safety

# SMS at IndiGo



## 1. Commitment to Safety – [Safety Policy](#)



## 2. Defining Safety responsibilities -

- Accountable Manager
- Safety Manager
- Airline Safety Committee
- Safety Action Group
- Local Safety Action Groups at stations



## 3. Defining Safety standards - Documentation



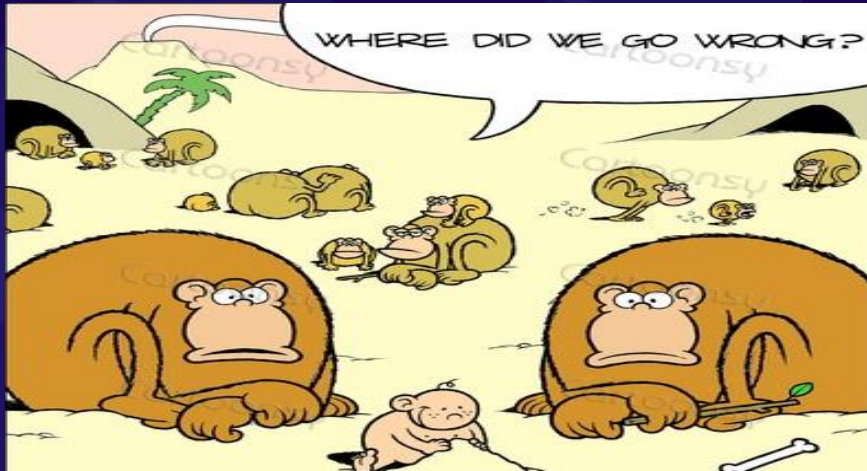
## 4. Monitoring & Achieving set Safety standards - SPI

# Developing a Reporting & Learning Culture

Why is reporting required ?



## Monkeys

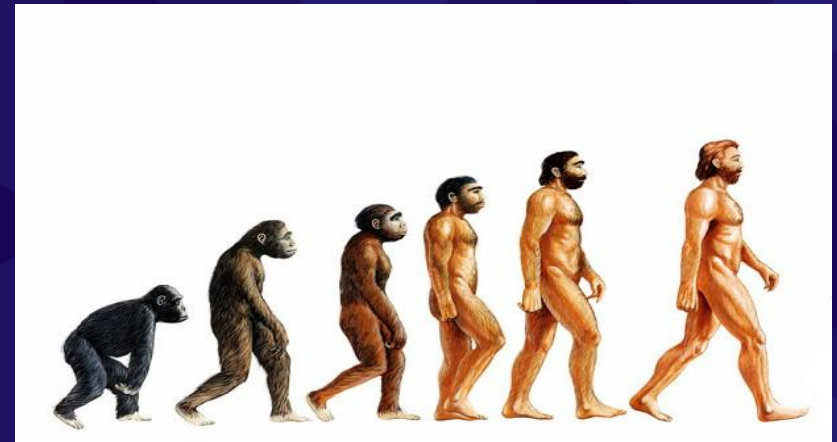


Monkeys transferred Information



## Humans

Humans started reporting & recording Information



# Safety Initiatives & Impact



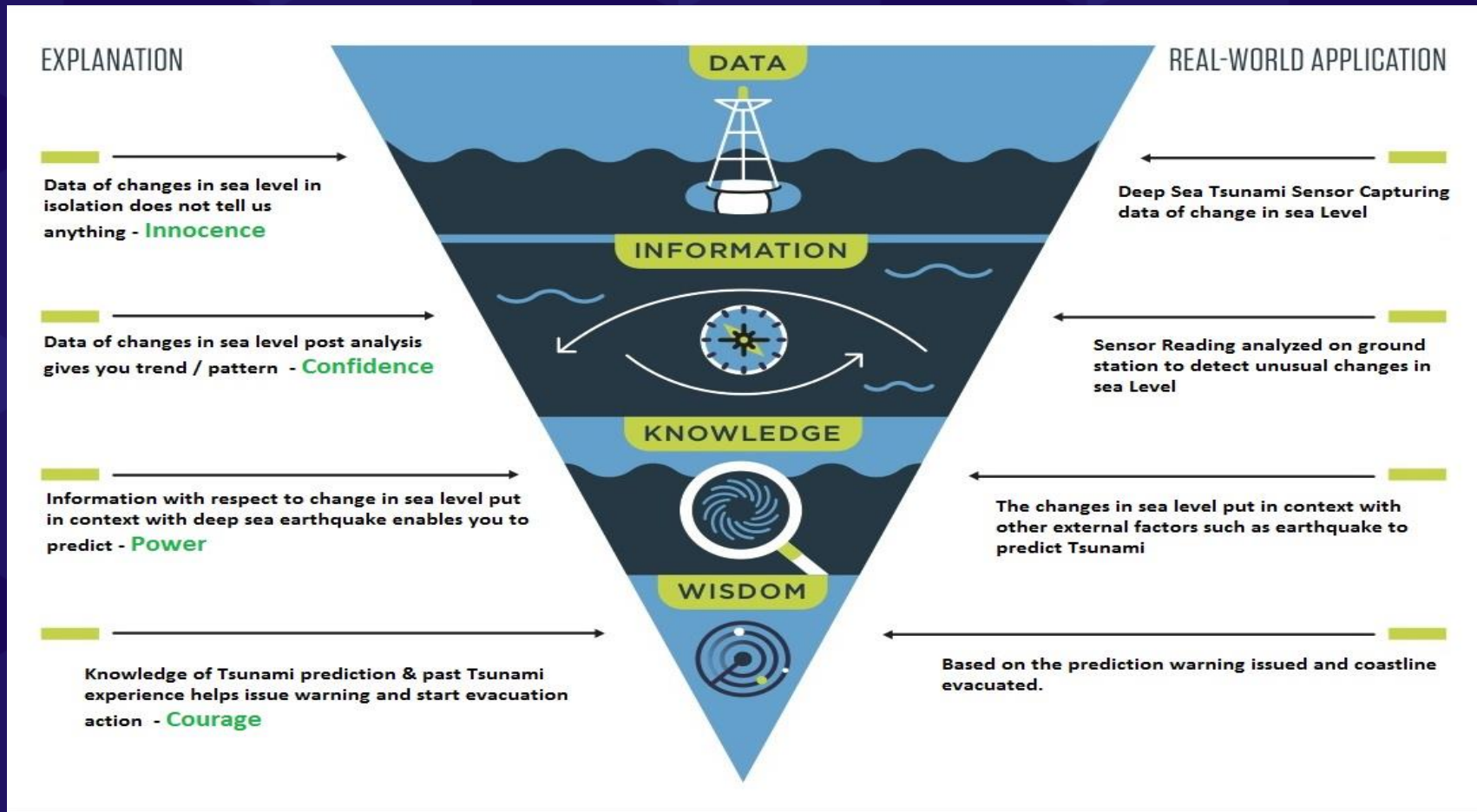
- ✓ Centralized Safety Data Collection and Analysis with ready access of Safety analysis for all concerned
- ✓ Flight Data Monitoring (FDM) - Did we do it differently to create awareness amongst the Flying crew?
- ✓ Occurrence Investigation and Analysis to identify root cause.
- ✓ Safety Assurance through Audits, Surveillance, Inspections
- ✓ Safety Promotion through Case studies, Reports, Videos, etc.





# Safety Library

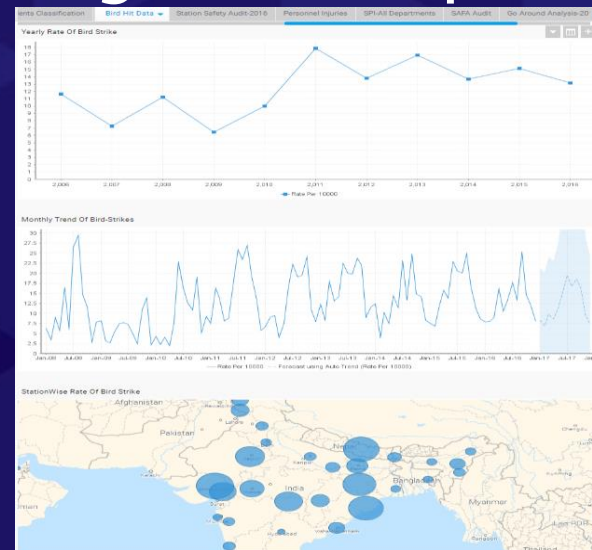
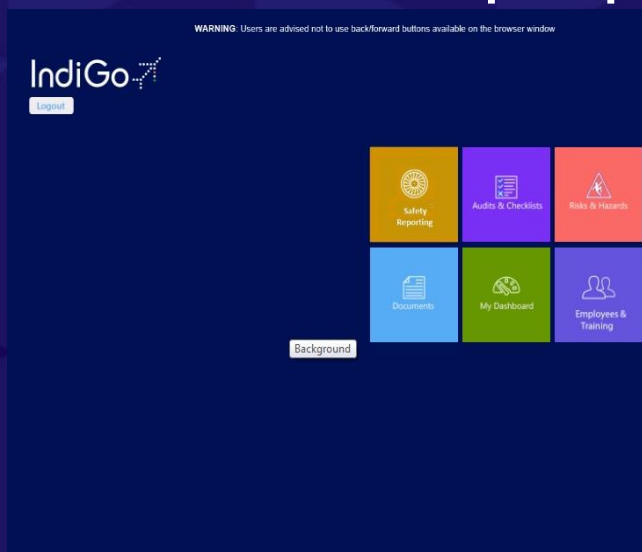
# At Safety Library Data collected is transformed into Knowledge.







- Readily accessible web based Centralized Safety database.
- Ease of Safety reporting through Online portal.



- Predictive Analysis- Identify underlying trends to address emerging safety issues.
- Station Safety Risk Profiling.
- Online access to Flight Crew to view personal event / SOP data for feedback.

#### AHMEDABAD (AMD)

RISK LEVEL		
BIRD/ANIMAL MENACE		HIGH
UNSTABLE APPROACH	RWY 05	HIGH
	RWY 23	LOW
HIGH G LANDING	ALL RWYS	MEDIUM
	RWY 05	LOW
LONG FLOAT	RWY 23	HIGH
	RWY 05	LOW
LONG LANDING	RWY 23	HIGH
HARSH BRAKING		NO TREND
GO-AROUND		LOW

#### 1. BIRD/ANIMAL MENACE STATISTICS

- 1.1 Bird/Animal Menace Rating: High
- 1.2 Rate of Bird Strikes - 3 per 1000 Landings
- 1.3 Most affected Runway: RWY 23 (66.7%)
- 1.4 Most affected Phase of Flight: Landing Roll (40.7%)

#### 2. TAKE-OFF STATISTICS

RWY	Percentage of Conf-1+4 TO	Percentage of Conf-2 TO	Percentage of Conf-3 TO
05	1	99.8	0.0
23	7	99.3	0.2

#### 3. APPROACH DISTRIBUTION

##### 3.1. Percentage of Approaches flown at Station:

RWY	IIS	IIS-Raw Data	LOC-Only	VOR	Visual
05	-	-	-	89.0	11.0
23	91.8	4.6	0.2	0.4	3.1

##### 3.2. Statistics for Landing Configuration:

RWY	Percentage of Conf-3 Landings	Percentage of Conf-Full Landings
05	32 %	69 %
23	47 %	53 %

#### VADODARA (BDQ)

RISK LEVEL		
BIRD/ANIMAL MENACE		MEDIUM
UNSTABLE APPROACH	RWY 04	LOW
	RWY 22	LOW
HIGH G LANDING	RWY 04	LOW
	RWY 22	LOW
LONG FLOAT	RWY 04	NO TREND
	RWY 22	LOW
LONG LANDING	RWY 04	LOW
	RWY 22	LOW
HARSH BRAKING		LOW
GO-AROUND		LOW

#### 1. BIRD STRIKE STATISTICS

- 1.1 Bird/Animal Menace Rating: Medium
- 1.2 Rate of Bird Strikes - 2 per 1000 landings
- 1.3 Most common specie of Bird identified to strike: NIL
- 1.4 Most affected Phase of Flight: Approach and Landing Roll (100%)

#### 2. TAKE-OFF STATISTICS

RWY	Percentage of Conf-1+4 TO	Percentage of Conf-2 TO	Percentage of Conf-3 TO
04	99.2	0.1	0.7
22	98.9	0.3	0.8

#### 3. APPROACH DISTRIBUTION

##### 3.1. Percentage of Approaches flown at Station:

RWY	IIS	IIS-Raw Data	LOC-Only	VOR	Visual
04	-	-	-	96.0	4.0
22	92.3	3.3	0.4	0.8	3.3

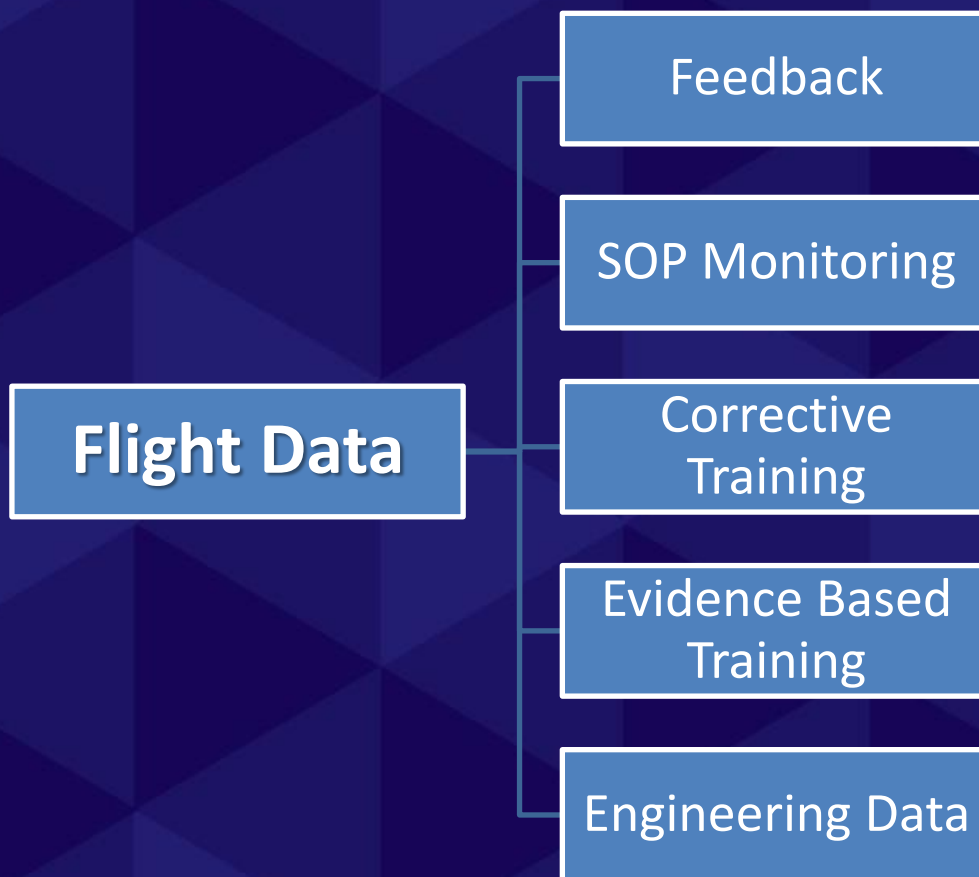
##### 3.2. Statistics for Landing Configuration:

RWY	Percentage of Conf-3 Landings	Percentage of Conf-Full Landings
04	15 %	85 %
22	26 %	74 %





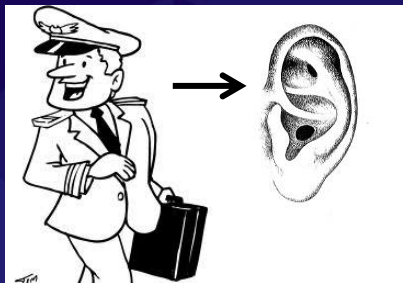
# Flight Data Monitoring



# Accident prevention and pilot training (FDM & CVR)

- Flight Data Monitoring (FDM) → 100%

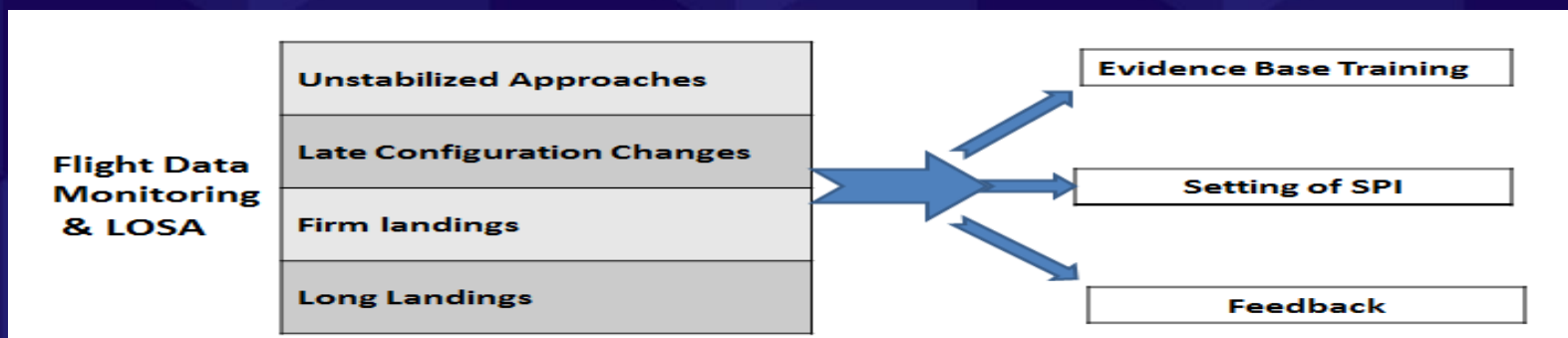
- 



→ Feedback on FDM

- Cockpit Voice Record (CVR) Monitoring → 50%

- Two retired flight crew inducted to monitor CVR's & to carry out





# Occurrence Investigation



# Investigation

To identify the root cause of incident / accident and prevent reoccurrence.

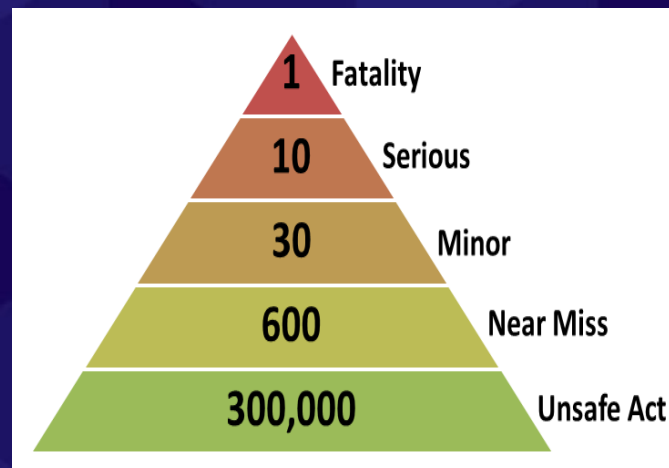
Focus on deficiencies rather than apportioning blame.

Supported by strong Safety Policy.

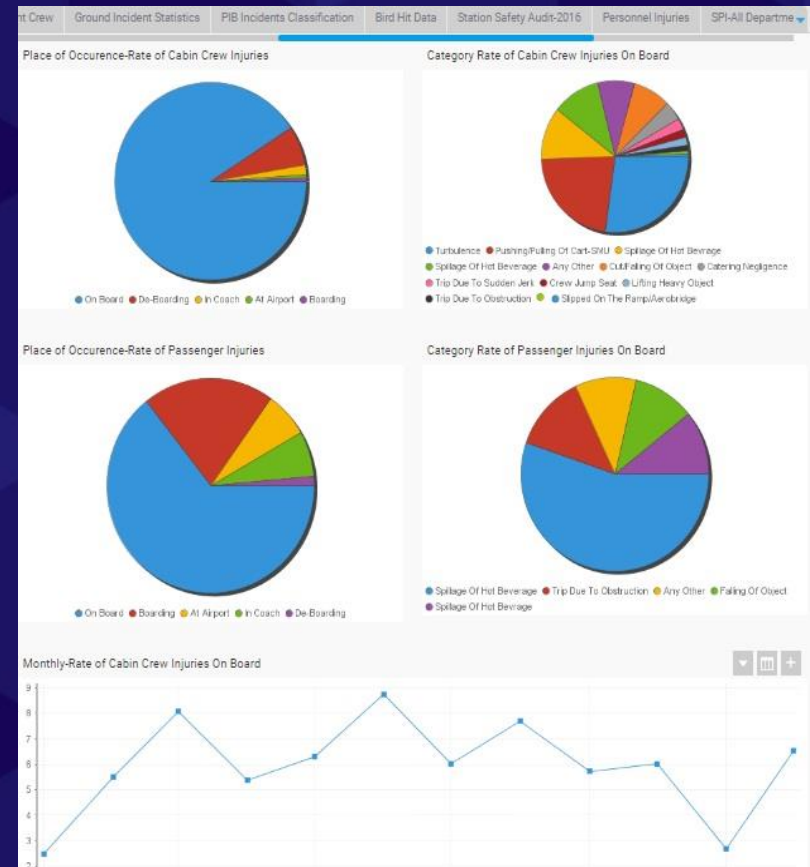
Mandatory Reporting:

Few Examples:

- Rejected Take-Off
- EGPWS Warnings
- Technical Failures
- RA Activation
- Inadequacy Of Airport Facility



- Ground Incident Investigation
- Cabin Event Investigation
- Investigation of Medical Emergencies
- Security Related Incidents





# Safety Risk Assessment

# Safety Risk Assessment(SRA)-

SMS is a data driven approach to manage safety. Safety Risk Assessment forms the core of this approach to safety.


At IndiGo SRA is an integral part of the way we conduct our operations it includes –

- Identifying hazards
- Risk Analysis
- Risk Mitigation & Recording
- Review of Assessment

SRA is conducted for

- Natural hazards
- Technical Hazards
- Economic hazards
- Change Management





InterGlobe Aviation Limited

FST 003

Safety Assessment –for Commencement of Scheduled Flight Operations (Day &Night) from new terminal Chandigarh Airport

Issue 1

Revision 0

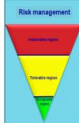
### Risk Assessment and Mitigation

**Safety Issue 1:** Staff awareness about the new terminal and the new apron

**Possible Consequences:** Confusion & Chaos during Emergencies and would not be able to guide others as well as themselves.

**Risk Score:** 2C  
**Existing Controls:** Nil

LIKELIHOOD	SEVERITY				
	Catastrophic A	Hazardous B	Major C	Minor D	Negligible E
Frequent 5	SA	SA	SA	SD	SE
Occasional 4	HA	HA	Medium	Medium	Medium
Rare 3	HA	Medium	Medium	Medium	Low
Improbable 2	Medium	Medium	Low	Low	Low
Extremely Improbable 1	Low	Low	Low	Low	Low



Risk management

Assessment risk index

High

Medium

Low

Suggested criteria

Unacceptable under the existing circumstances

Acceptable based on risk mitigation. Inquire require management decision

Acceptable

**Residual risk score:** 2C  
**Additional Control:** SOPs to be laid down by AAI in case of emergencies at the Ramp and emergency procedures to be laid down for emergencies which can be encountered in the Terminal Building like Fire exits, assembly points etc.

All IndiGo staff to be made aware of emergency procedures both at the Ramp and Terminal building. Clear, visible and easily identifiable markings to be made to depict Emergency exits, assembly points etc. (Floor layout plans, Exit boards etc.).

**Final Risk level:** Medium



# Safety Assurance



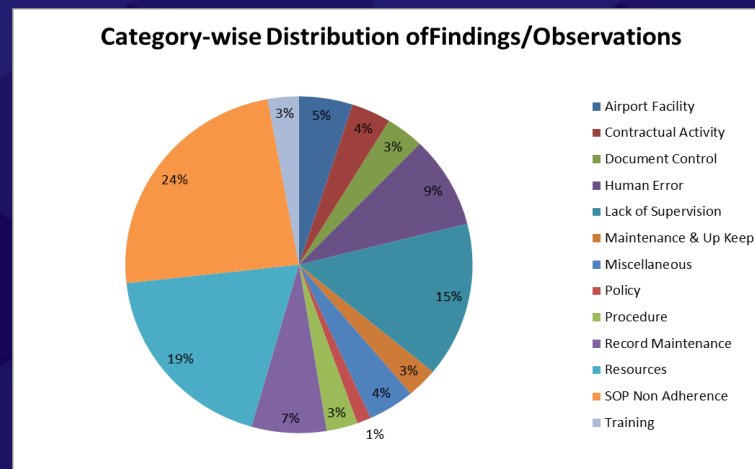
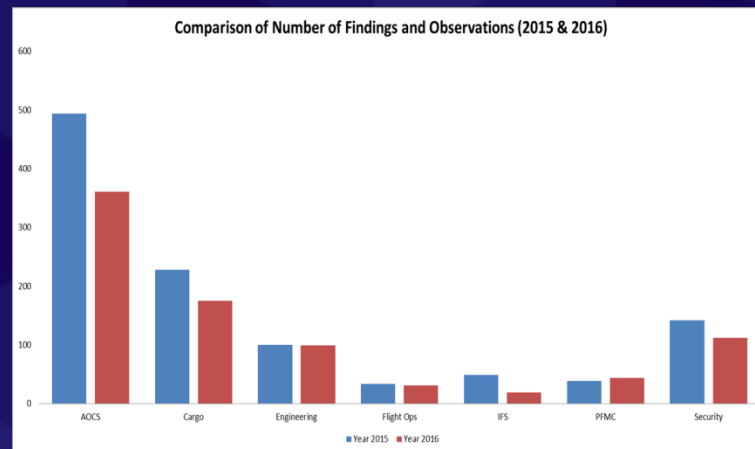
## Safety Audits-

- 6 main stations twice a Year.
- 5 International Stations once in two years
- 33 stations Once in a year

## Safety Inspections -

- Quarterly inspection of OCC, training, PFMC, LMD, Training & Ramp.
- Monthly Four Cabin & Cockpit Surveillance.

## Internal LOSA Observations

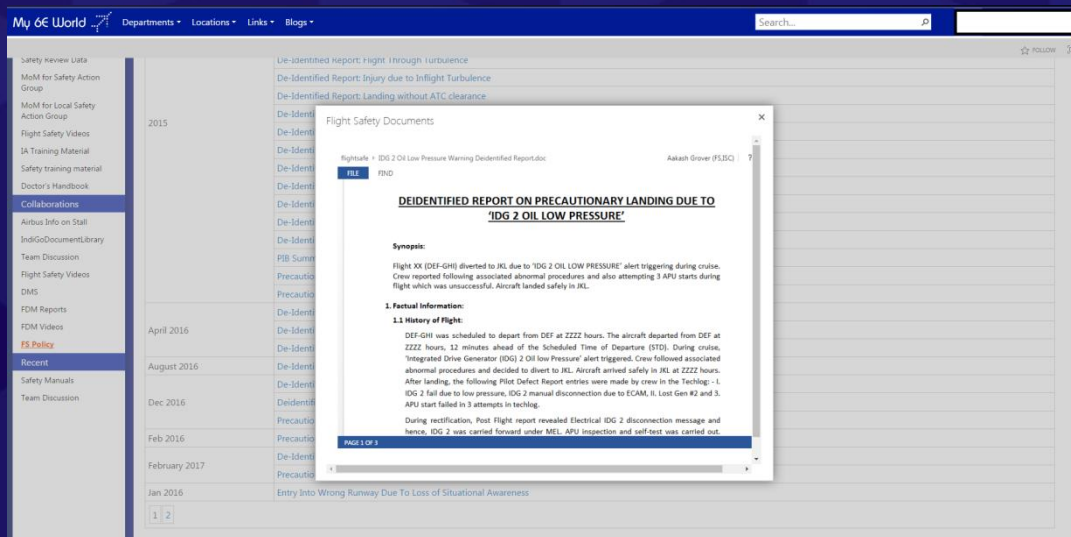






# Safety Promotion

- 





- Introduction of Classes on Fatigue and Sleep management for Cockpit Crew.
- Online Feedback to Cockpit Crew
- FDM Diary released to all crew highlighting station FDM trends.



# Safety is everybody's concern at IndiGo

