

航空公司安全管理經驗分享

tigerair
台灣虎航



TTW SQ Office
雷治中



大綱

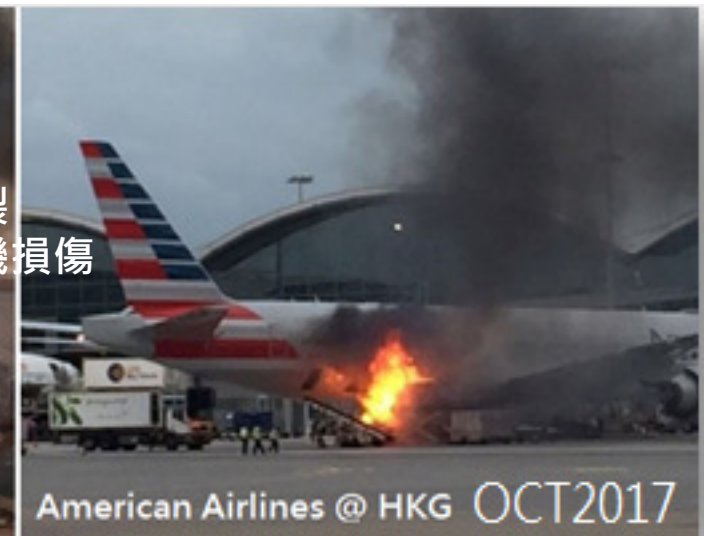
1. 地面安全與航空公司
2. 地面事件統計分析與案例
3. 地面安全管理-法規及合約
4. 地面安全管理-危害辨識與風險管理
5. 地面安全管理-安全保證
6. 地面安全管理-安全提升



一、地面安全與航空公司

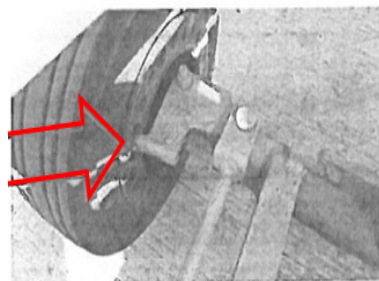


地面安全與航空公司

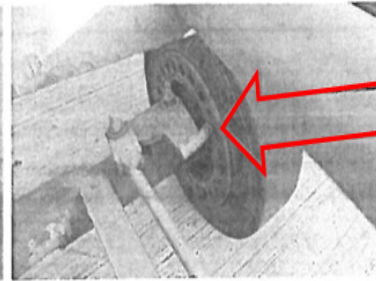


地面安全與航空公司

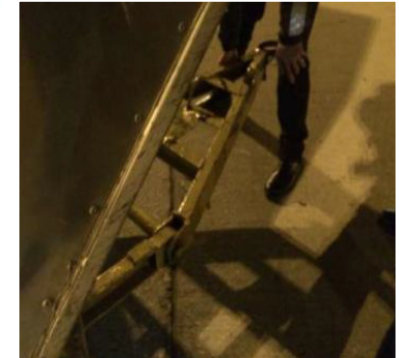
出口貨櫃(1~5號盤車)置於 Ramp ERA(紅色標線)外，因裝載需求，進行 4號盤車鎖扣與3號盤車分離後，於拖行作業中，Tug駕駛員未注意 5號盤車與其他盤車之空間距離不慎碰撞3號盤車，且因 1號盤車煞車失效致使1-3號串接聯結盤車繼續向前滑動遂擠壓4號發動機進氣罩下緣造成凹陷損傷4.5吋(長) x 7/16吋(深)。



Right Hand Side front wheel
(lock pin barely touching the disc)



Left Hand Side front wheel
(lock pin bent and slightly touching the disc)



地面安全與航空公司



地面安全與航空公司



地面安全與航空公司

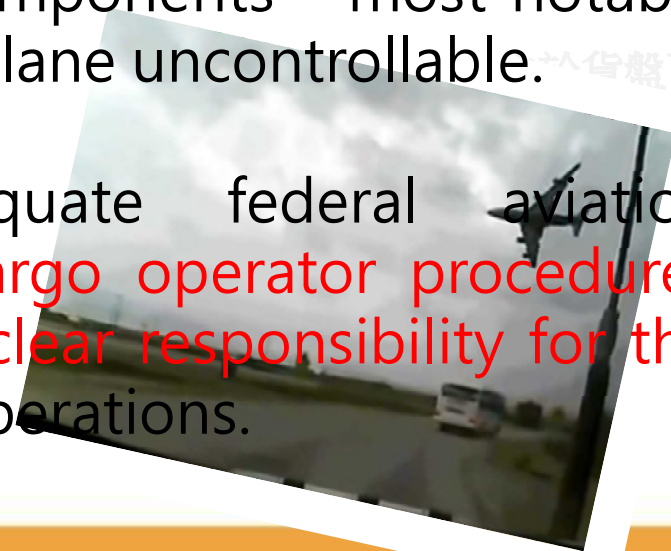
2013年 National Airlines flight 102 crashed, Afghanistan

Investigators confirmed the **load shift** hypothesis as the starting point: **three armoured vehicles and two mine-sweeping vehicles**, totalling 80 tons of weight, had **not been properly secured**. At least one armoured vehicle had come loose and rolled backwards against the airplane's **rear bulkhead**, damaging the bulkhead. This also crippled key hydraulic systems and damaged the horizontal stabilizer components - most notably the jackscrew, which rendered the airplane uncontrollable.

(貨物未依規定綁妥及固定造成移動)

Investigators also found inadequate federal aviation administration (FAA) oversight of **cargo operator procedures and inspector training**, as well as unclear responsibility for the **oversight** of special cargo-handling operations.

截取自網路 wikipedia https://en.wikipedia.org/wiki/National_Airlines_Flight_102



地面意外事件的影響

- 地面損壞事件(Ground Damage Incident)
 - 直接損失
 - 對航空器造成損失每年40億美元
 - 間接損失
 - 人員受傷/死亡
 - 收益損失/機組人員成本提高
 - 對受到影響和被延誤的旅客提供住宿餐飲和安置及保障後續聯航行程航班的安置
 - 航空公司及地服公司聲譽





Case Study

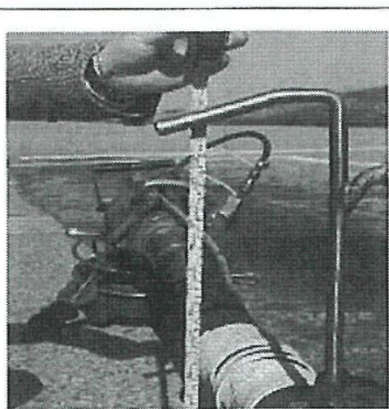
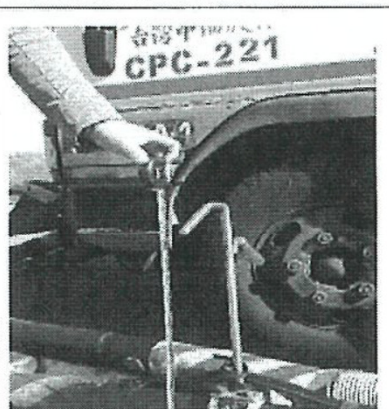
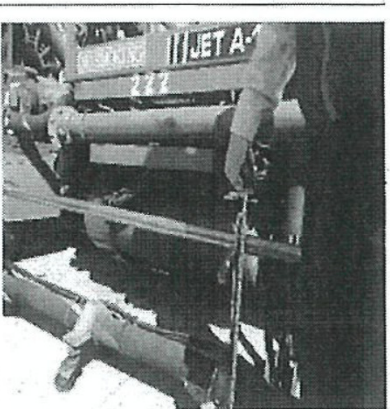
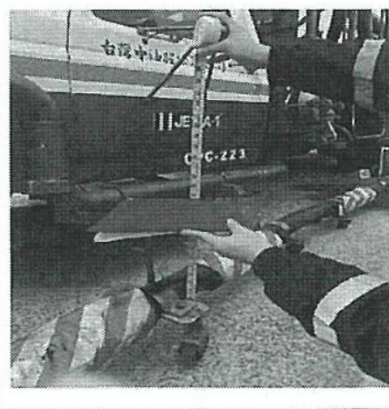
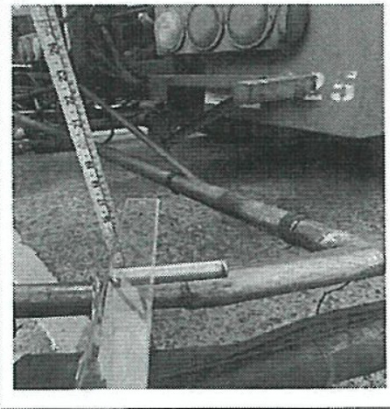
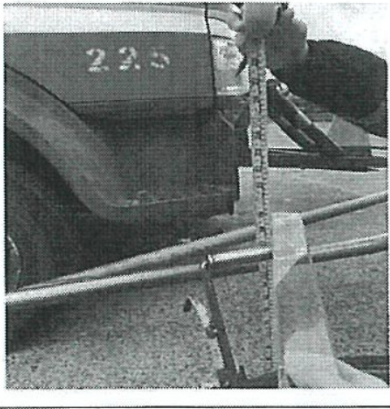
- There is one GDI incident that fueling staff dragged the fuel pipe through under R engine and the hook of the pipe hit the lower edge of engine cowling causing damage and AOG.



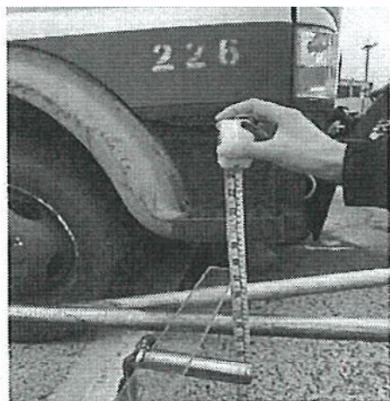
誰是兇手？

附件十二 中油公司油栓車掛勾高度調查表

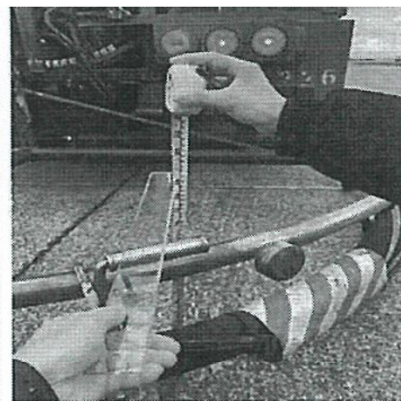
中油公司桃園機場航油中心油栓車掛勾高度調查表

			
CPC-221(108.01.15)63CM	CPC-221(108.01.15)63CM	CPC-222(108.01.15)63CM	CPC-222(108.01.15)63CM
			
CPC-223(108.01.21)52CM	CPC-223(108.01.21)51CM	CPC-225(108.01.21)58CM	CPC-225(108.01.21)58CM

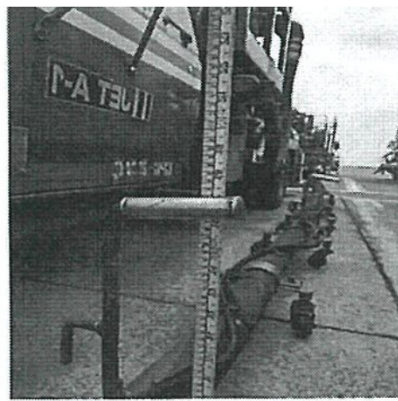
誰是兇手？



CPC-226(108.01.22)56CM



CPC-226(108.01.22)56CM



CPC-234(108.01.22)52CM



CPC-234(108.01.25)58CM



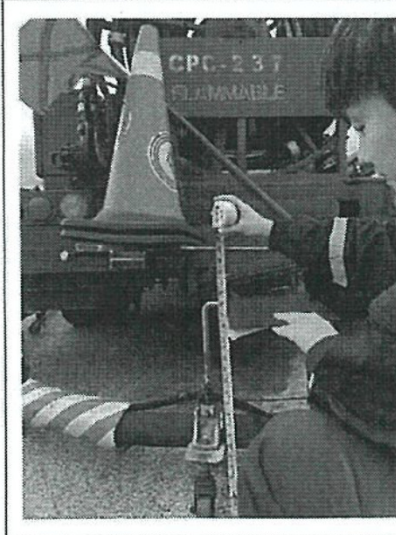
CPC-236(108.01.22)56CM



CPC-236(108.01.22)56CM

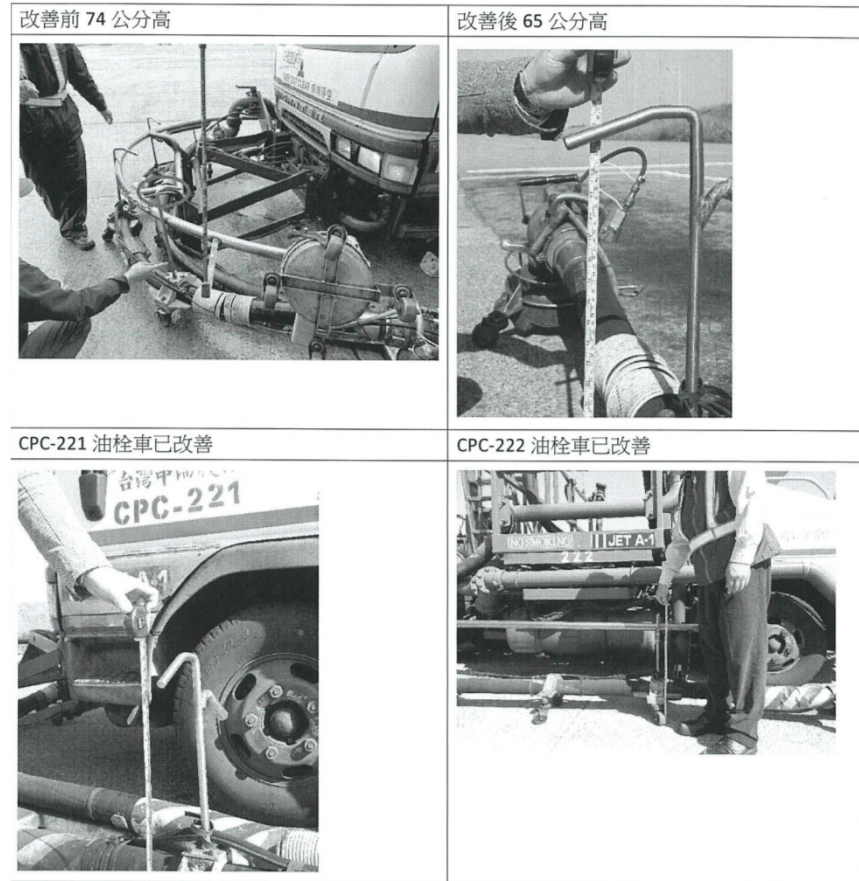
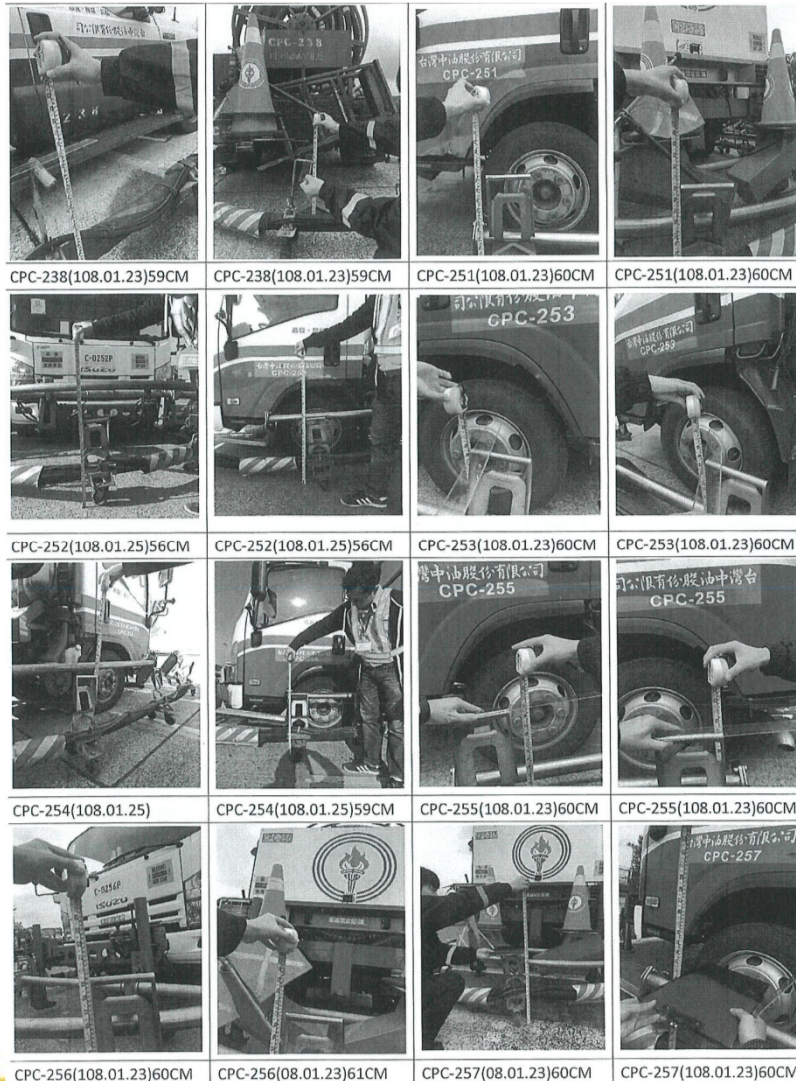


CPC-237(108.01.22)56CM



CPC-237(108.01.22)56CM

謎底揭曉.....



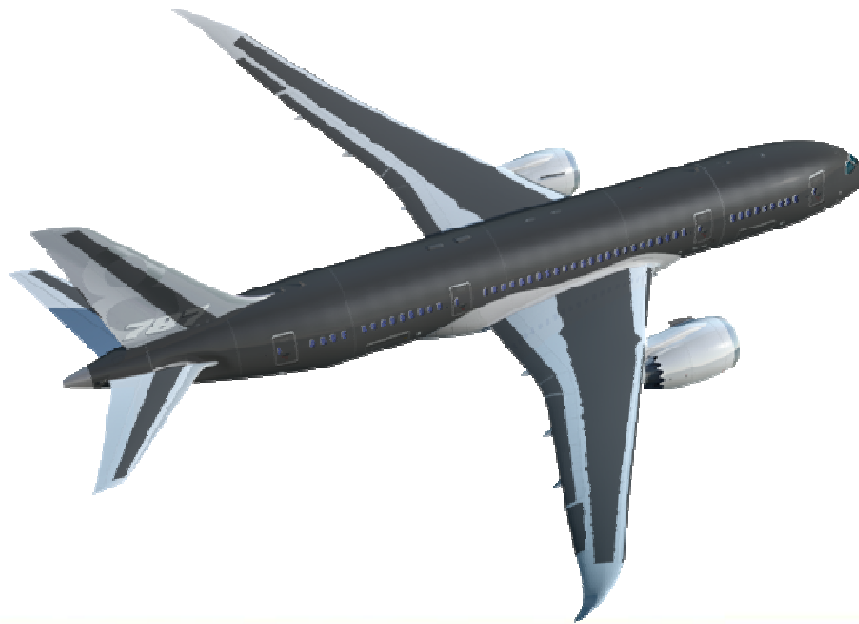
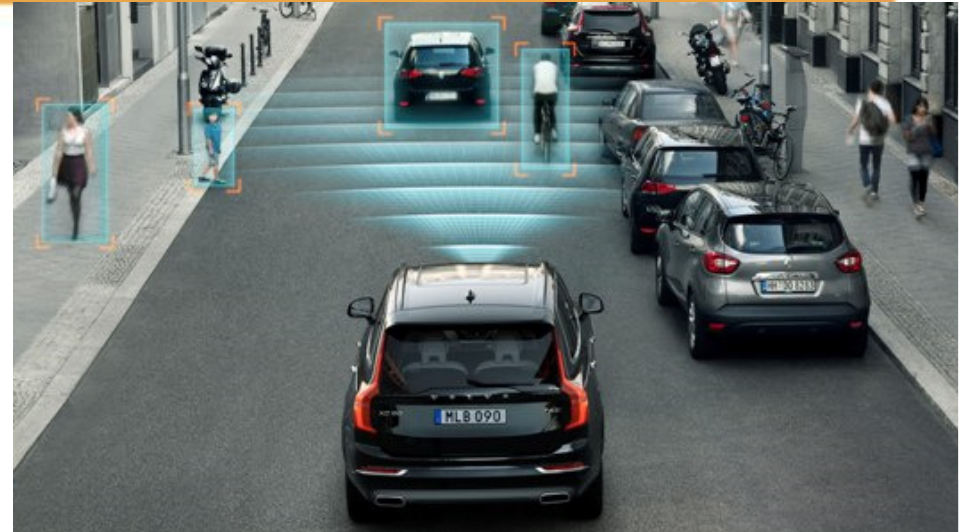
Responsibilities of the Load Supervisor

- Ground engineer please monitor fueling operation, fuel truck shall be parked parallel to the aircraft for immediate evacuation and the fuel pipe shall not pass underneath the engine.
- Load Supervisor or Ramp Coordinator please assist to monitor and coordinate the fuel operation, jointly defend ramp safety.



地面安全-未來的挑戰

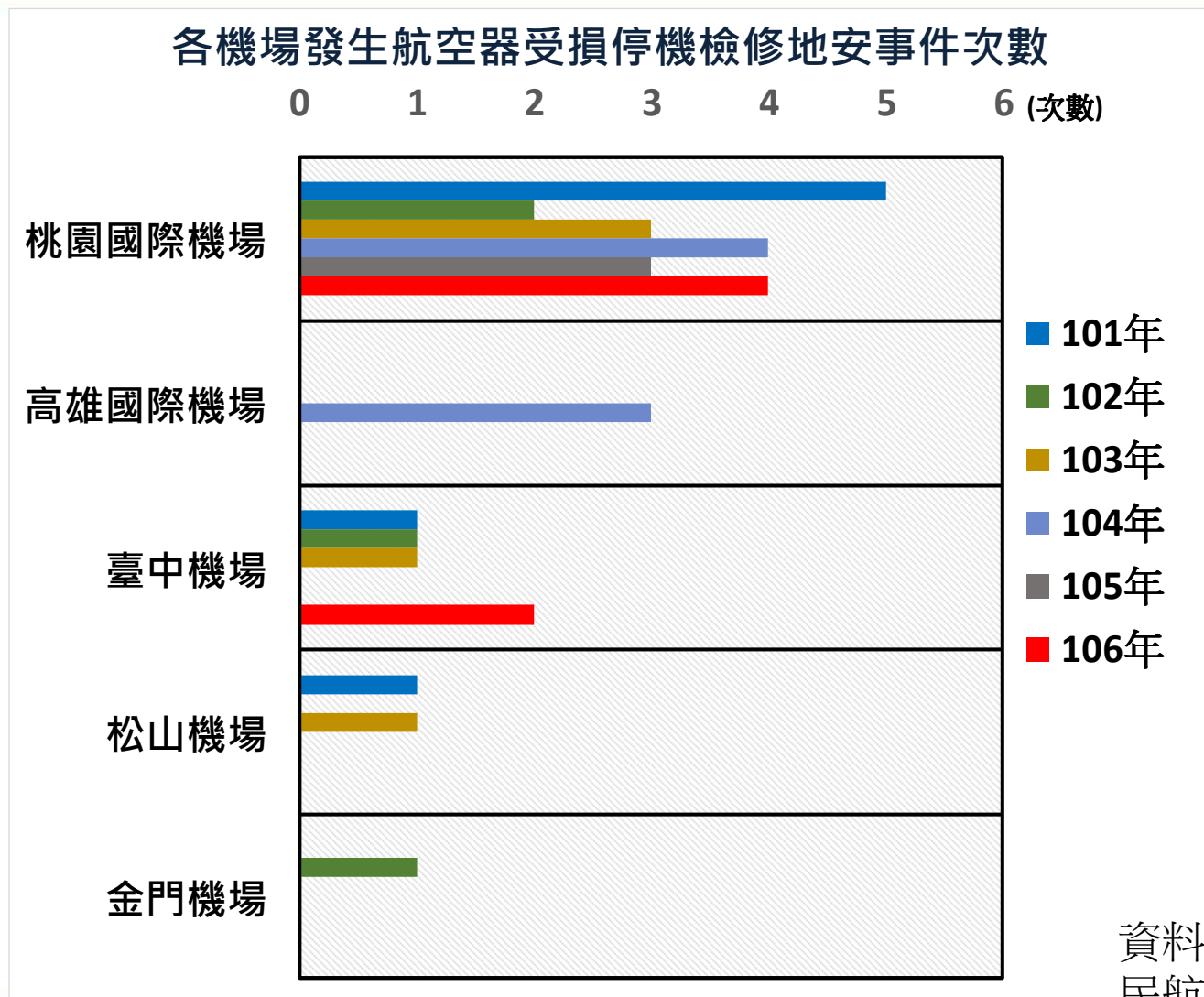
- 持續成長的運量
- 複雜的工作環境
- 複材航機的增加
- 新科技運用



© AIRBUS S.A.S. 2014 - photo by master films / H. GOUSSE

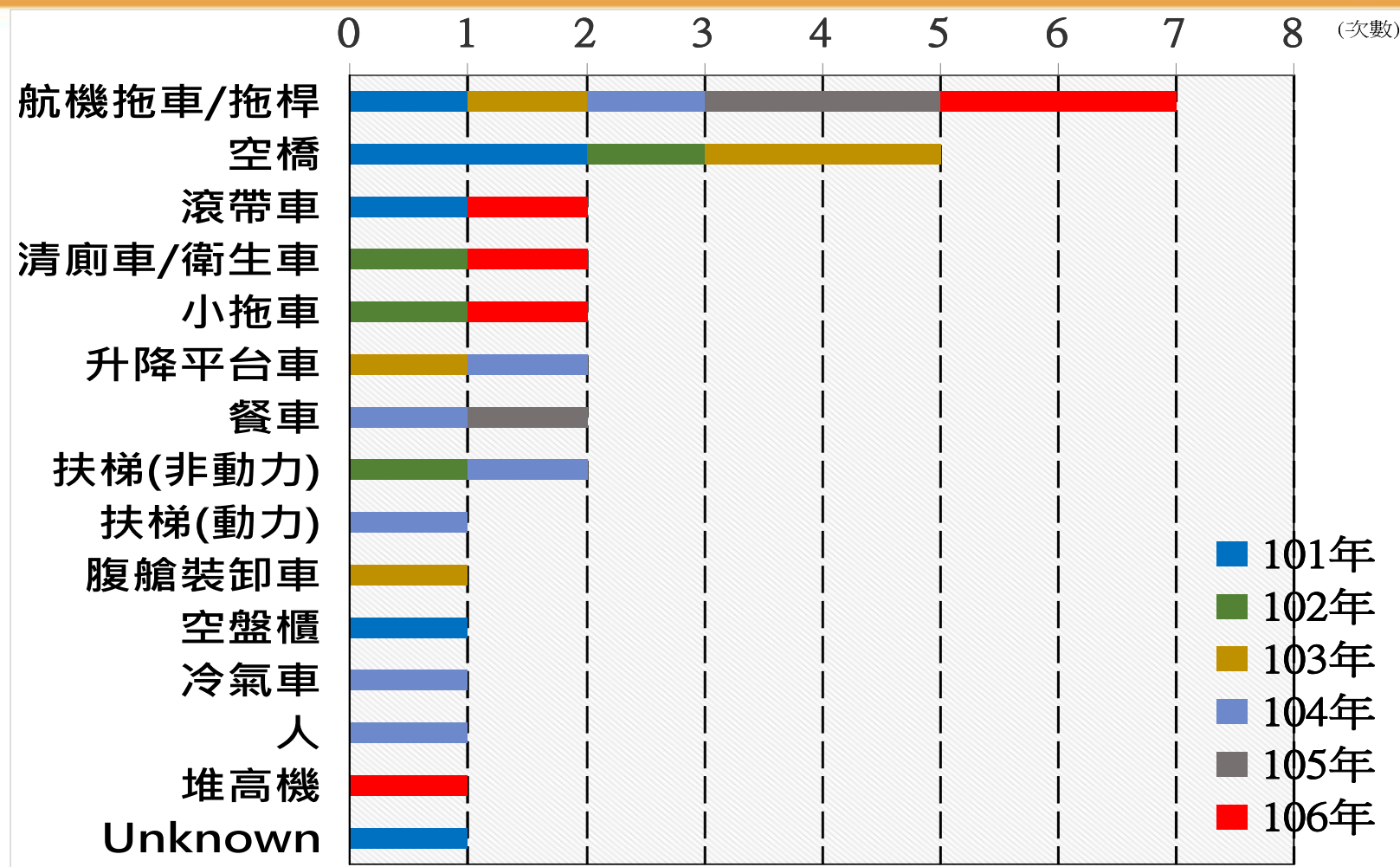
AIRBUS

二、地面事件統計分析與案例



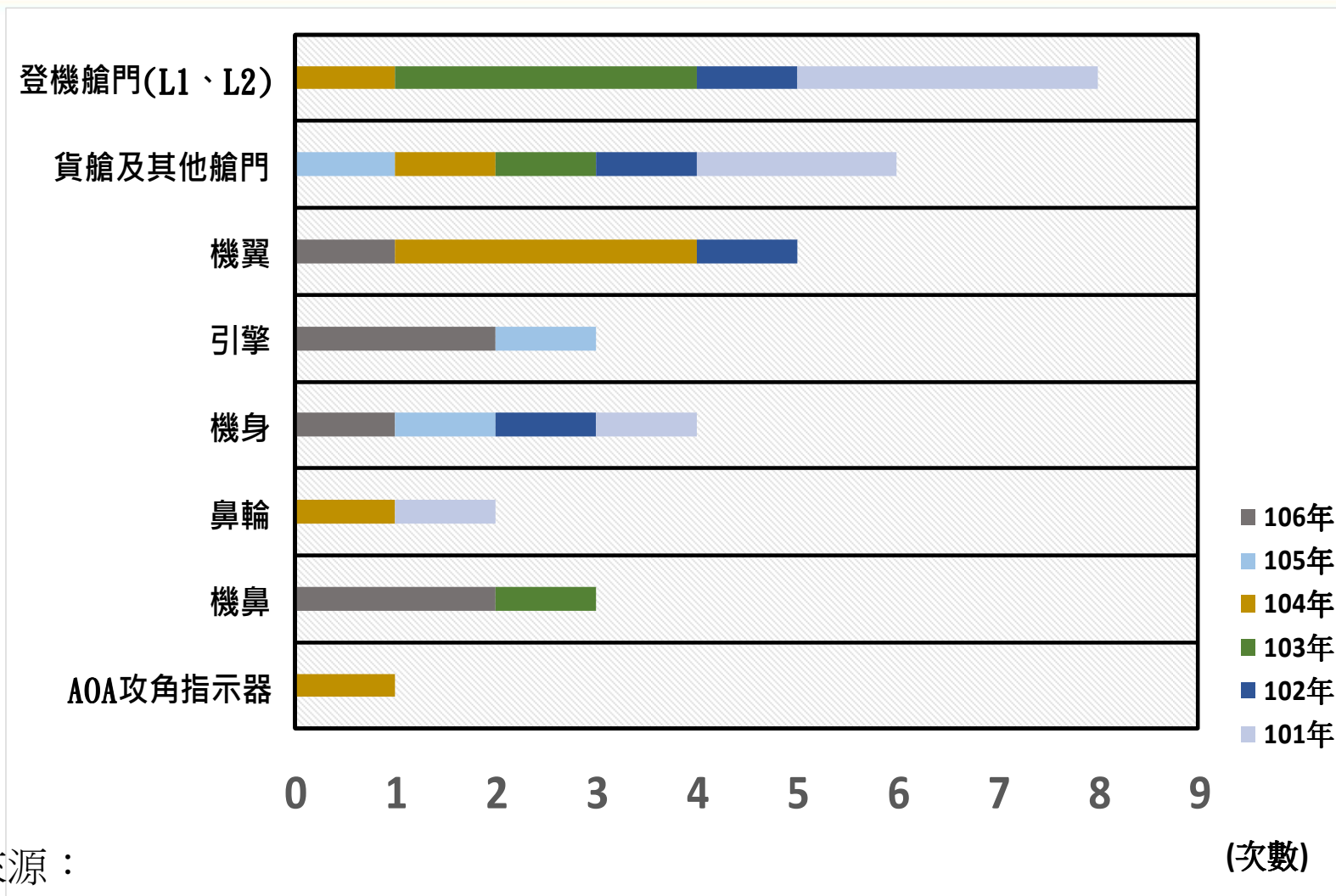
資料來源：
民航局場站小組

地面事件統計分析 - 肇事裝備



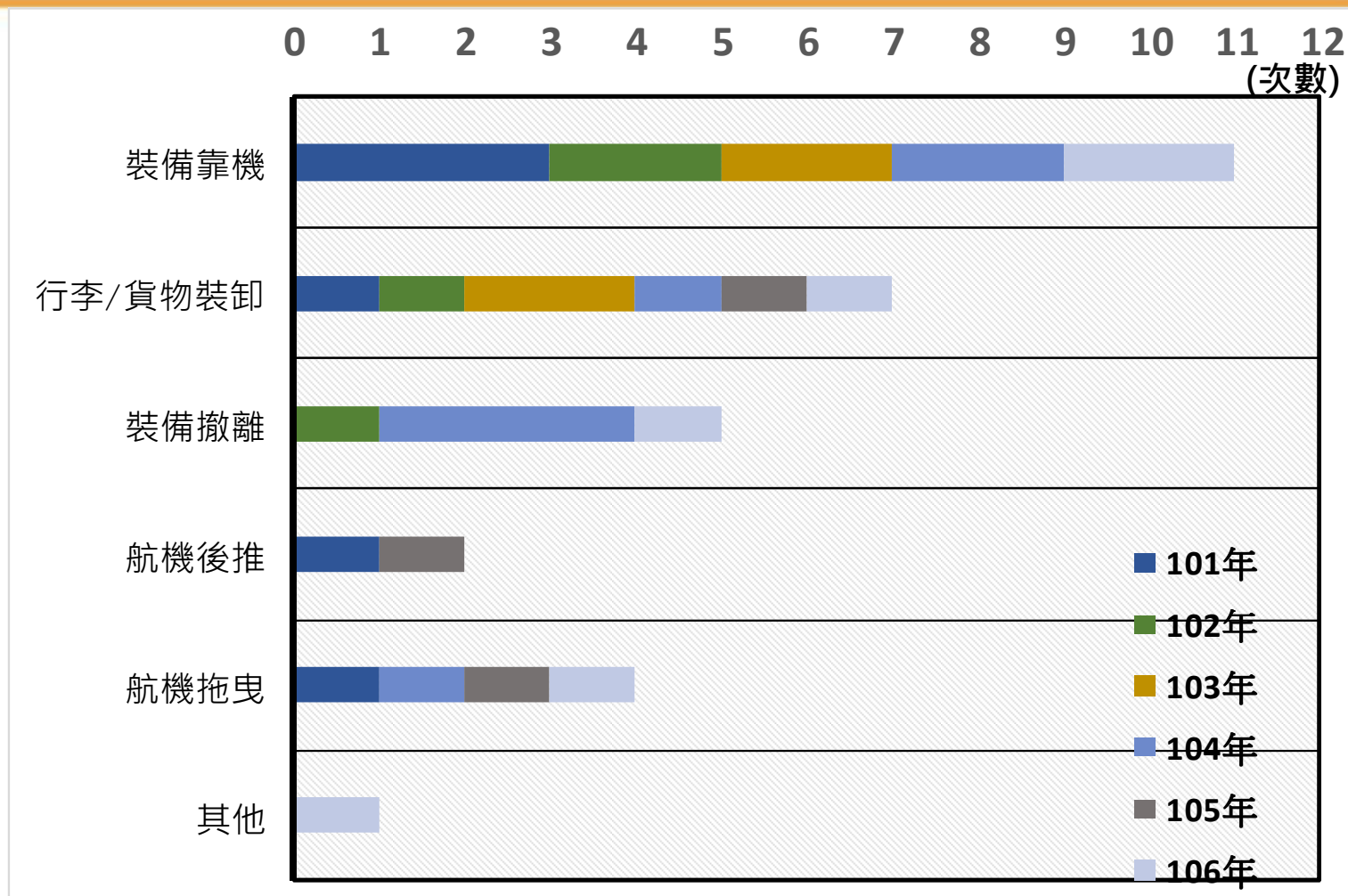
資料來源：民航局場站小組

地面事件統計分析 - 航機受損部位



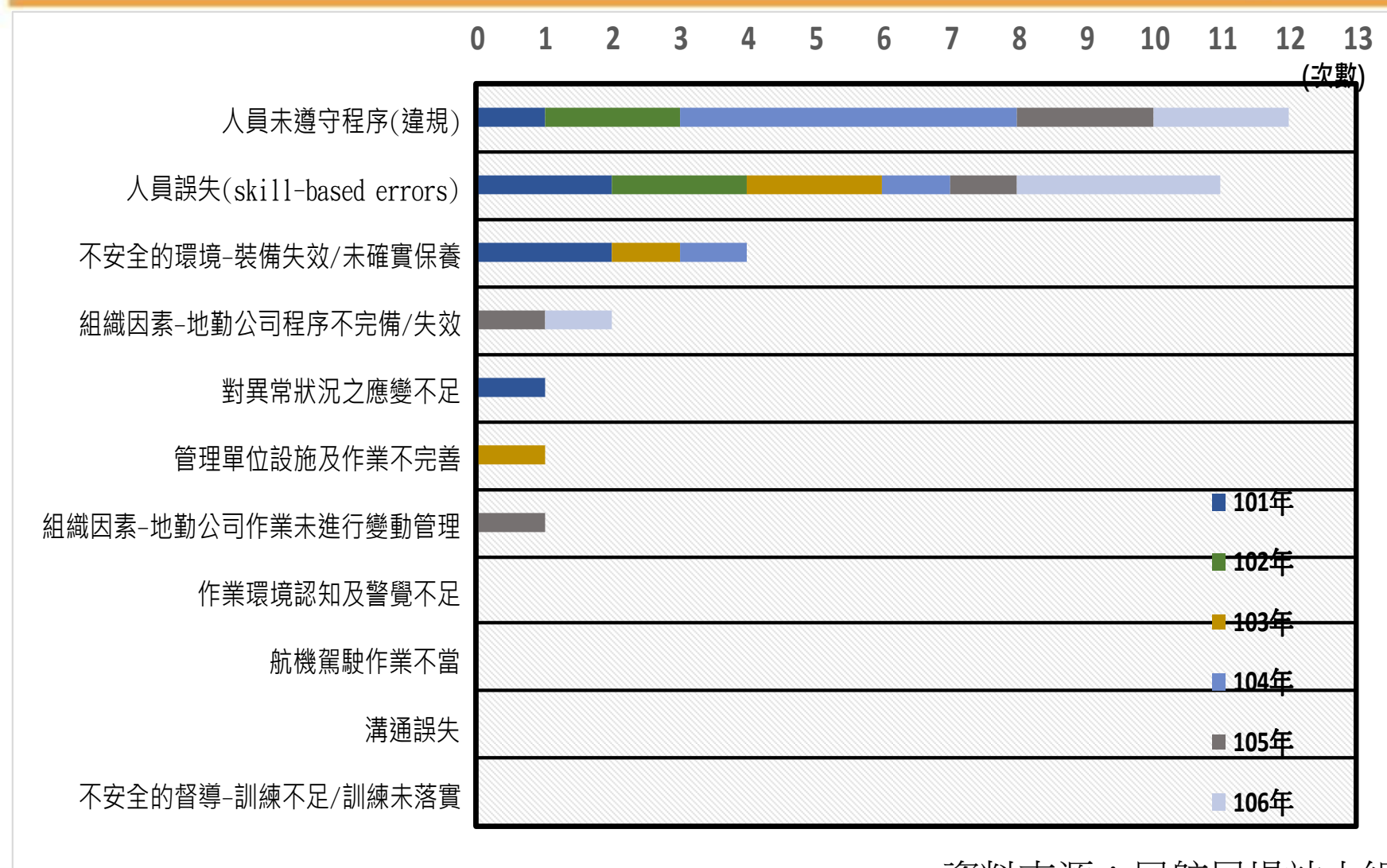
資料來源：
民航局場站小組

地面事件統計分析 - 作業階段



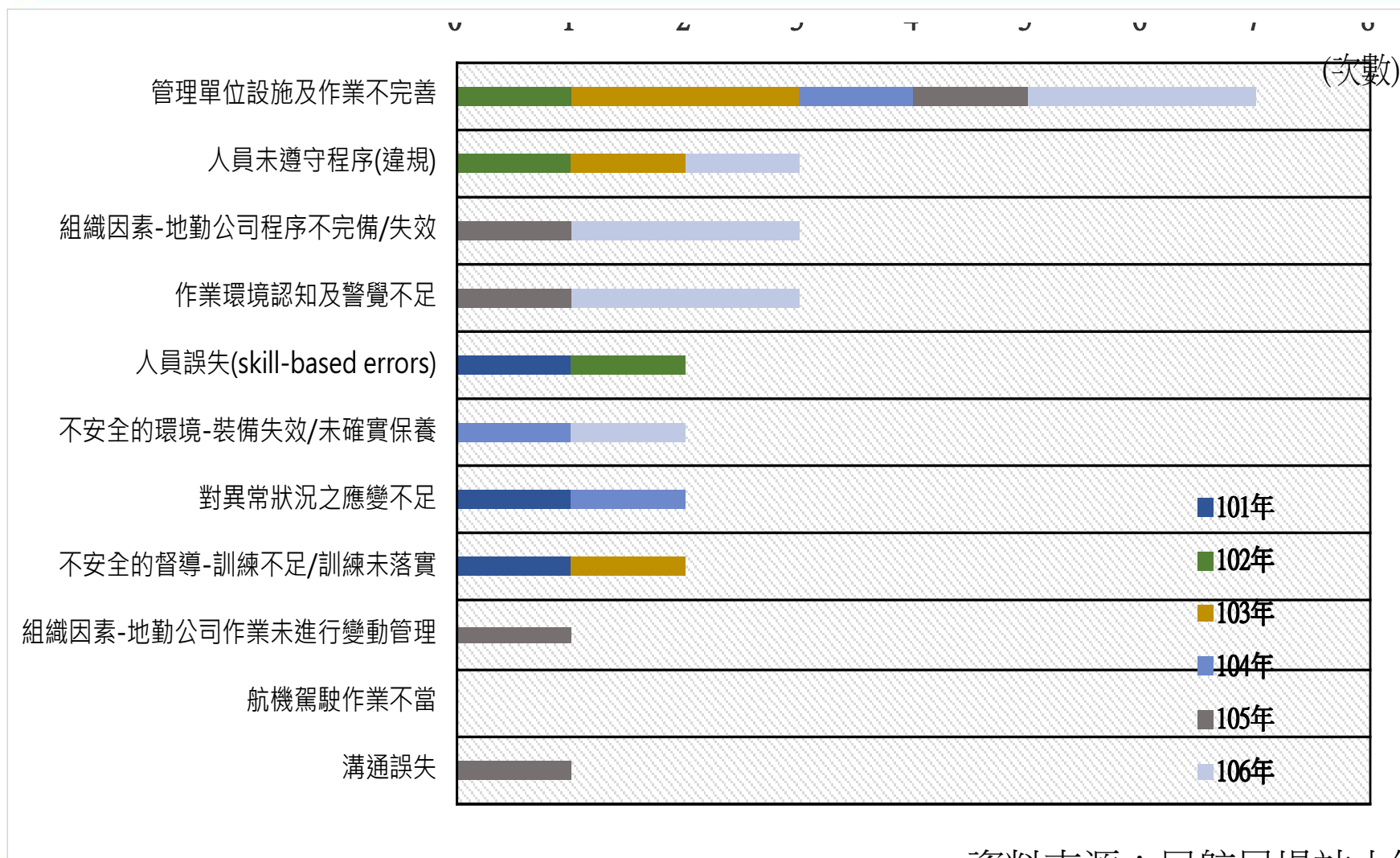
資料來源：民航局場站小組

地面事件統計分析 - 直接肇事原因



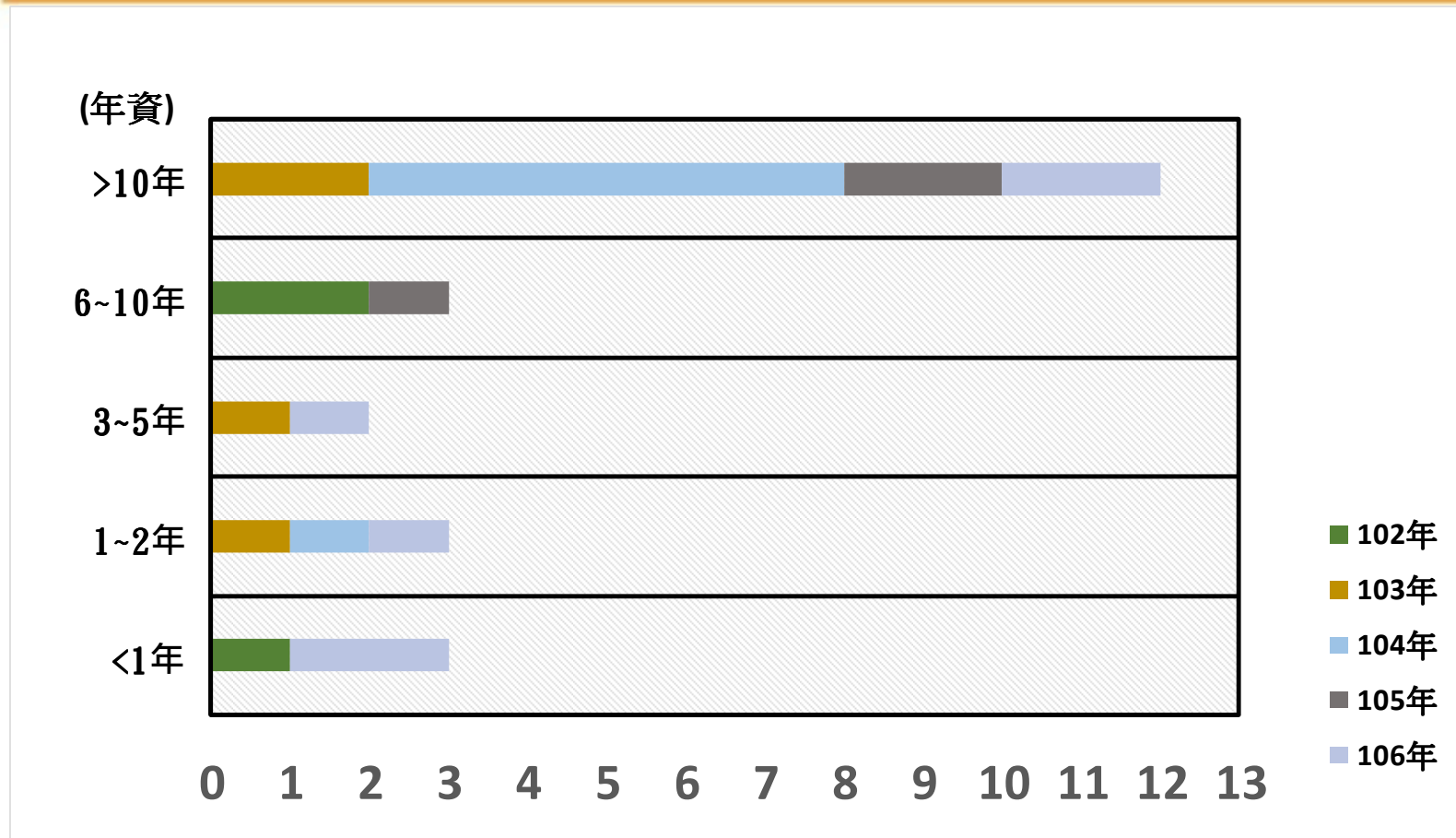
資料來源：民航局場站小組

地面事件統計分析 - 事件風險因素



資料來源：民航局場站小組

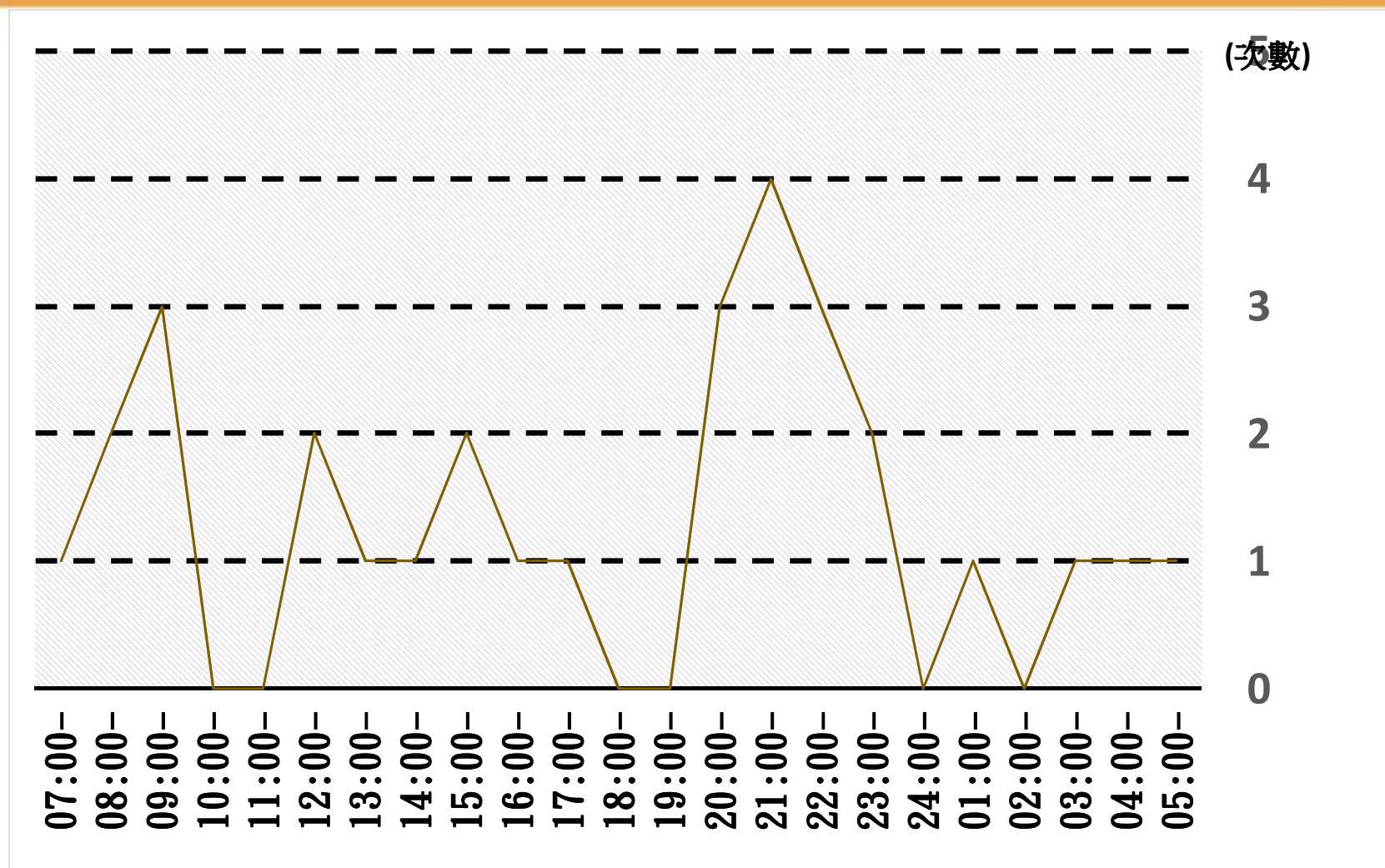
地面事件統計分析 - 肇事人員年資



➤ 資深人員為造成地安事件之主要群

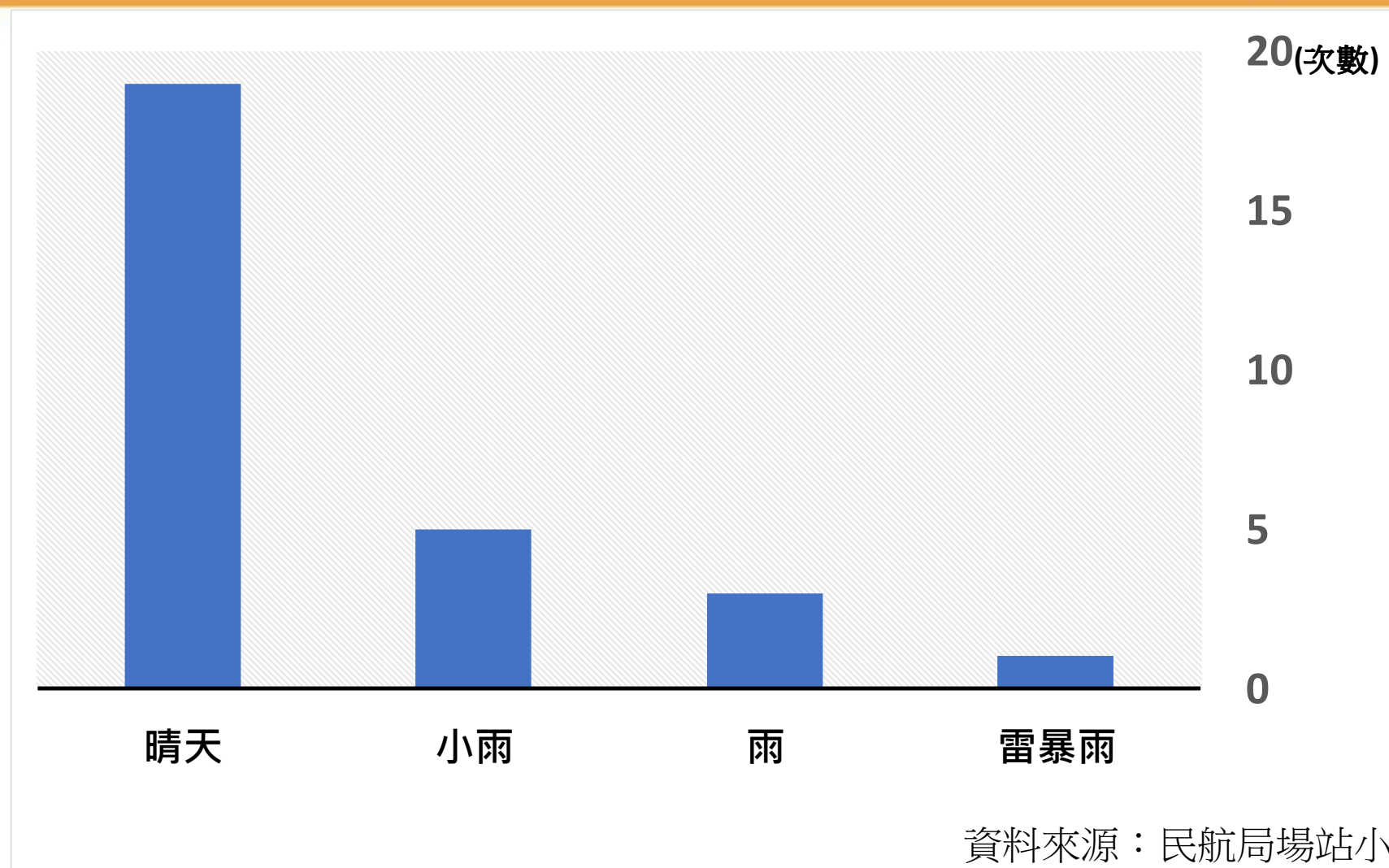
資料來源：民航局場站小組

地面事件統計分析 - 發生時間



資料來源：民航局場站小組

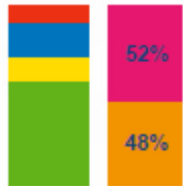
地面事件統計分析 - 發生天候



地面意外事件的趨勢-損傷部位

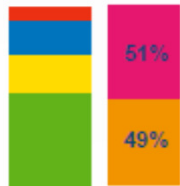
- 以發動機損傷報告最為嚴重，其次為水平及垂直尾翼。
- 以貨艙、貨艙門及機身損傷為報告最多但損傷較為輕微。

Fuselage -
370 reports



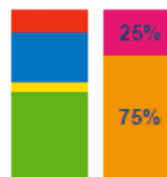
OSI = 17.64

Cabin doors -
250 reports



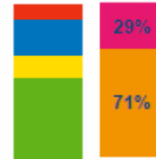
OSI = 13.98

Engine -
92 reports



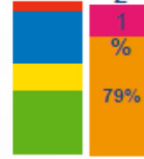
OSI = 24.22

Landing Gear -
99 reports



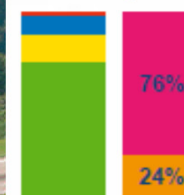
OSI = 17.40

Wing -
72 reports



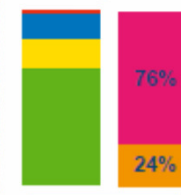
OSI = 16.94

Cargo Hold -
780 reports



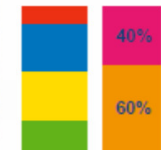
OSI = 5.91

Cargo doors -
420 reports



OSI = 7.23

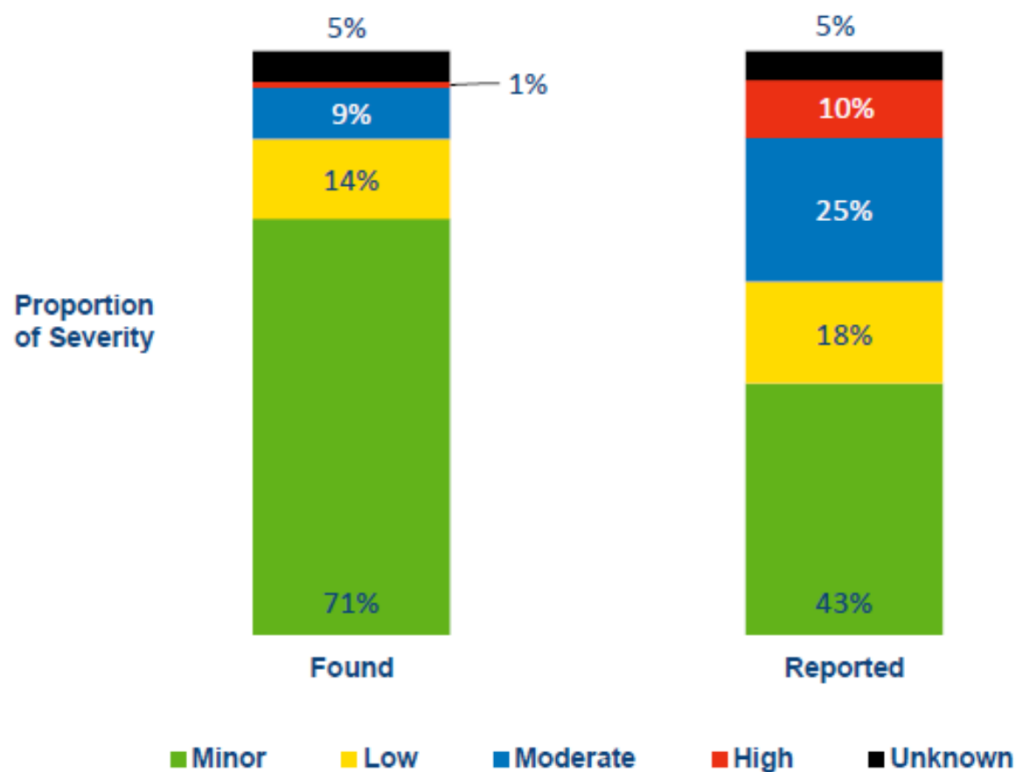
H/V Stabilizer -
9 reports



OSI = 24.11

地面意外事件的趨勢-損傷程度

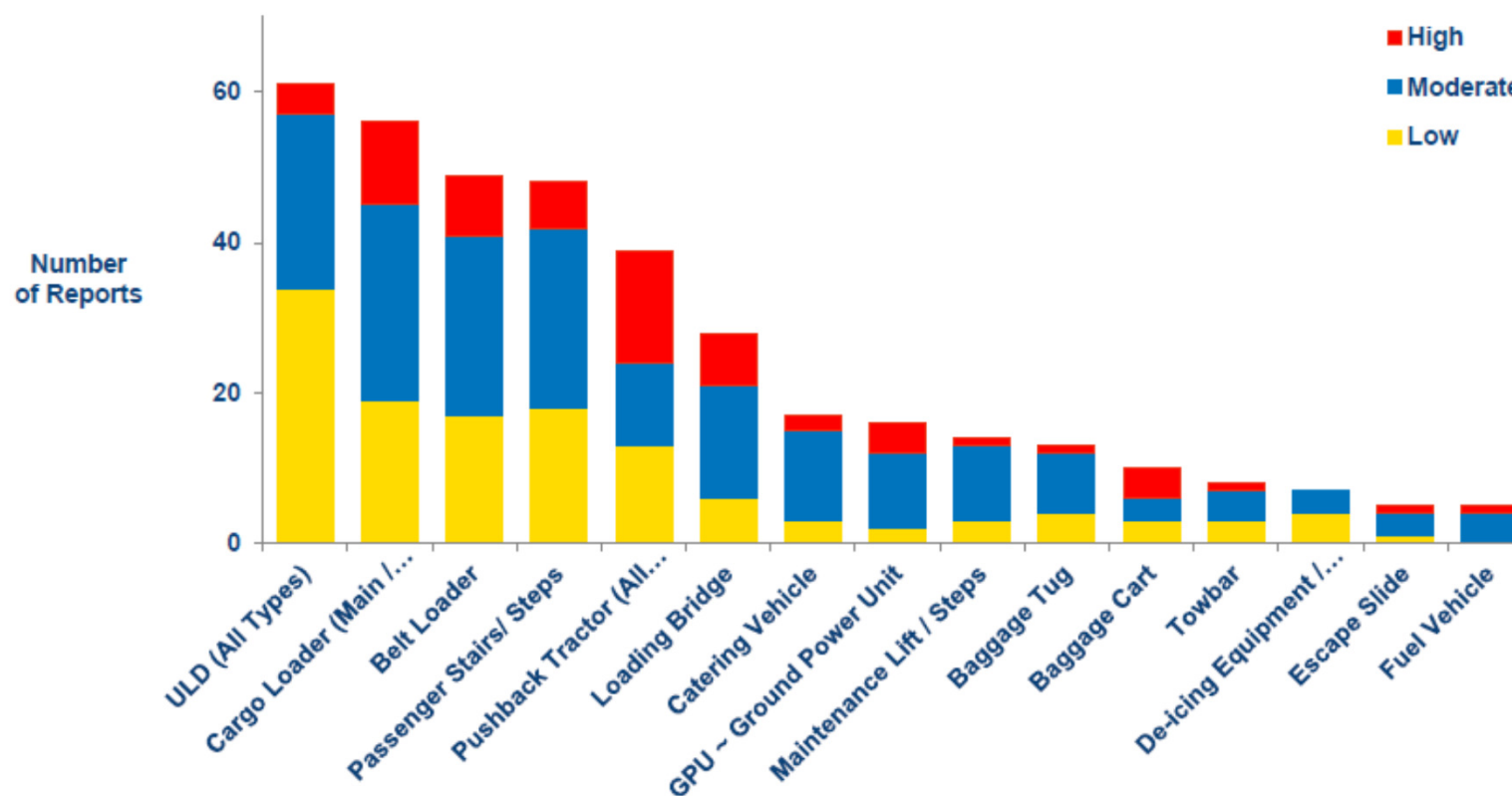
- 依IATA GDDB(Ground Damage Data Base)所收集的統計分析來看，71%(990件)為發現(Found)的地損事件為輕微。



地面意外事件的趨勢-裝備肇因

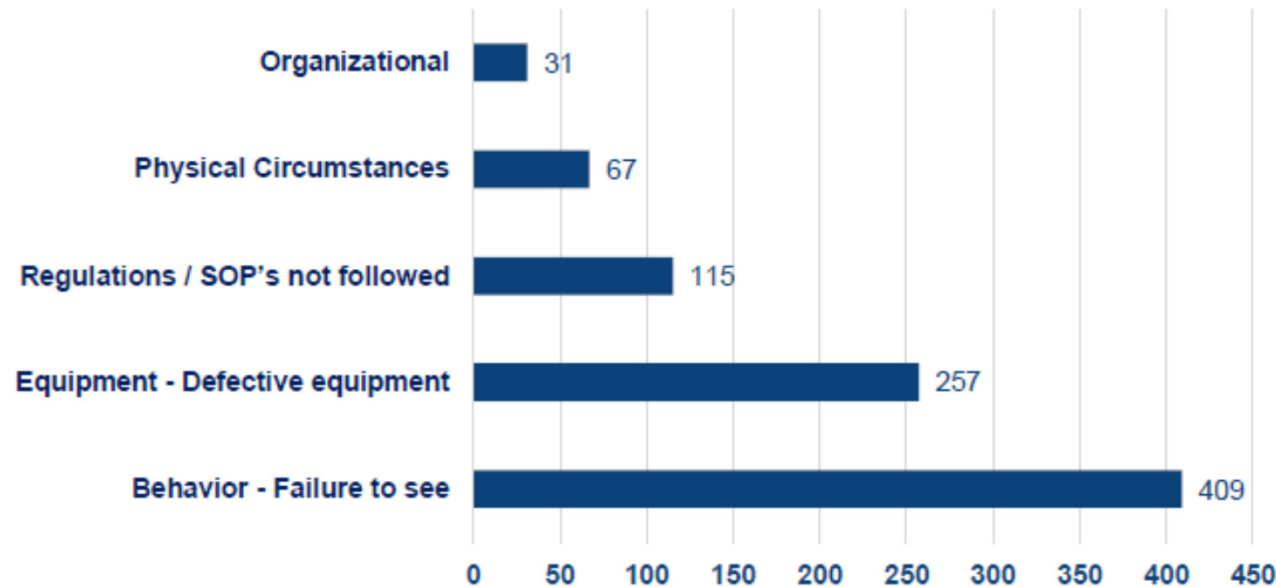
- GDDB所收集的統計分析，ULD, Cargo Loader及Belt Loader為造成航機損傷的前三名。

➤ ULDs, Cargo Loaders (Main / Lower Deck Loaders) and Belt Loaders were the top three equipment that caused damage during Winter 2017 – 18.



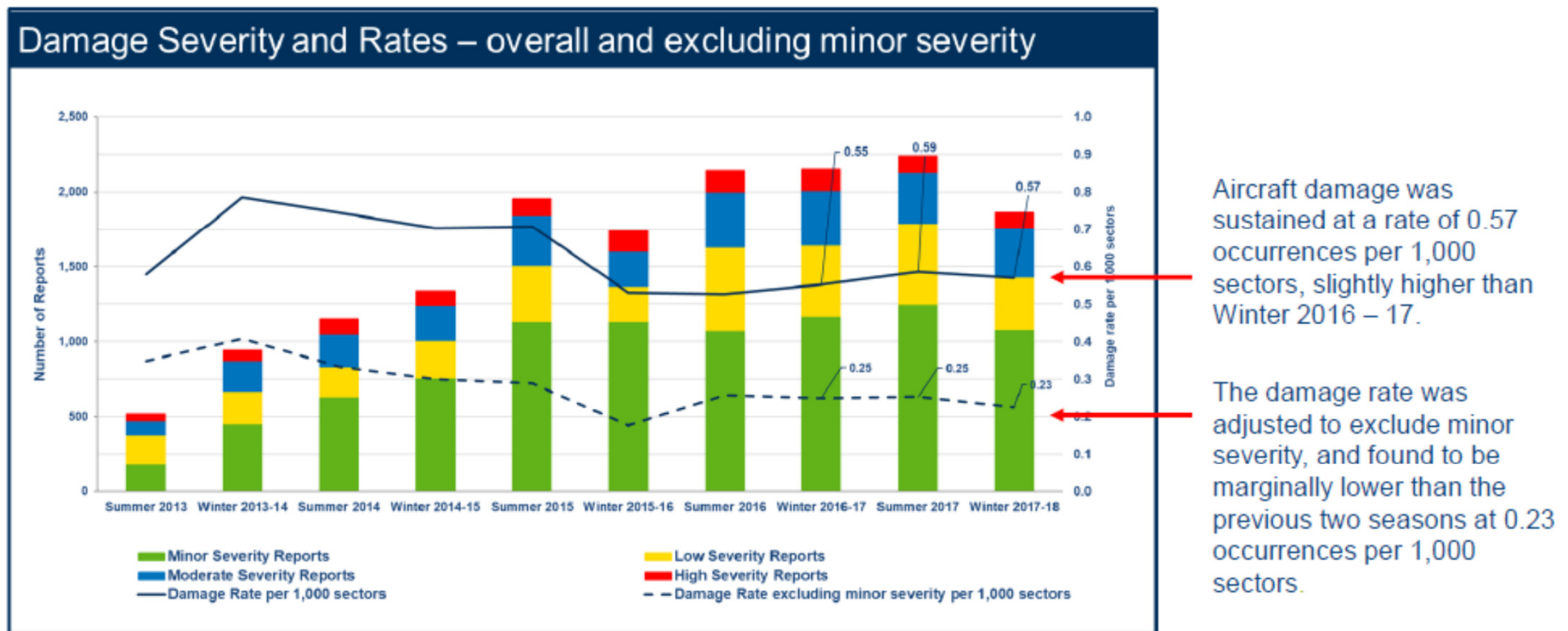
地面意外事件的趨勢-事件肇因

- 以GDDB所收集的統計分析來看，造成意外事件以Failure to see(失察)為最主要的原因，其次為裝備失效。



地面意外事件的趨勢-發生頻率

- 目前GDDB資料，整體趨勢尚稱平穩，地面損傷的發生率維持在每1000次航段為0.57次。
- 主要原因可能為機場及地勤公司持續推動安全管理系統SMS及ISAGO認證。



*In order to standardize the rate to industry standards, damage rate has changed to 1 report per 1,000 sectors.

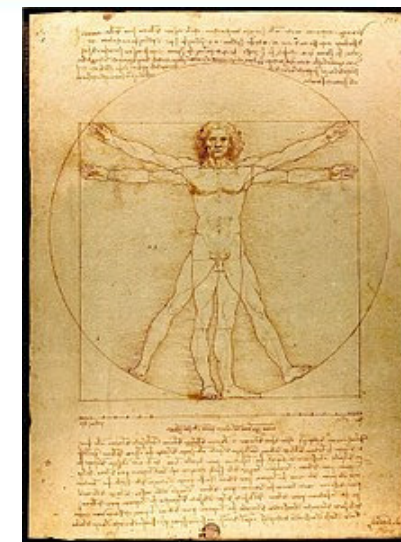
地面安全-未來的挑戰

To err is human 人為疏失

- 只要是就會犯錯
 - 不論其經驗、資歷、學歷、年紀等因素
 - 資深與資淺的差別不在於會不會產生疏失，而在於

資深員工查覺及處置疏失較快！

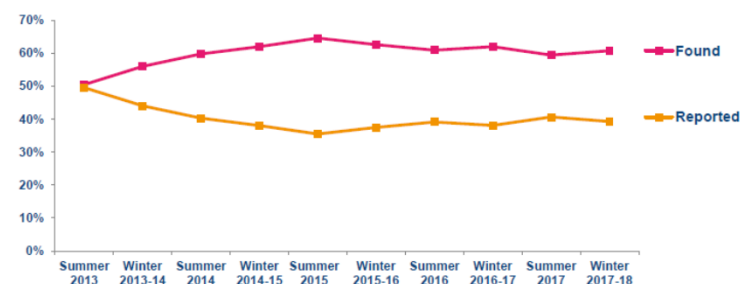
- 有效避免人為疏失重複發生的方法



**透過安全事件通報機制
鼓勵報告疏失或危害
並強化人員遵守SOP**

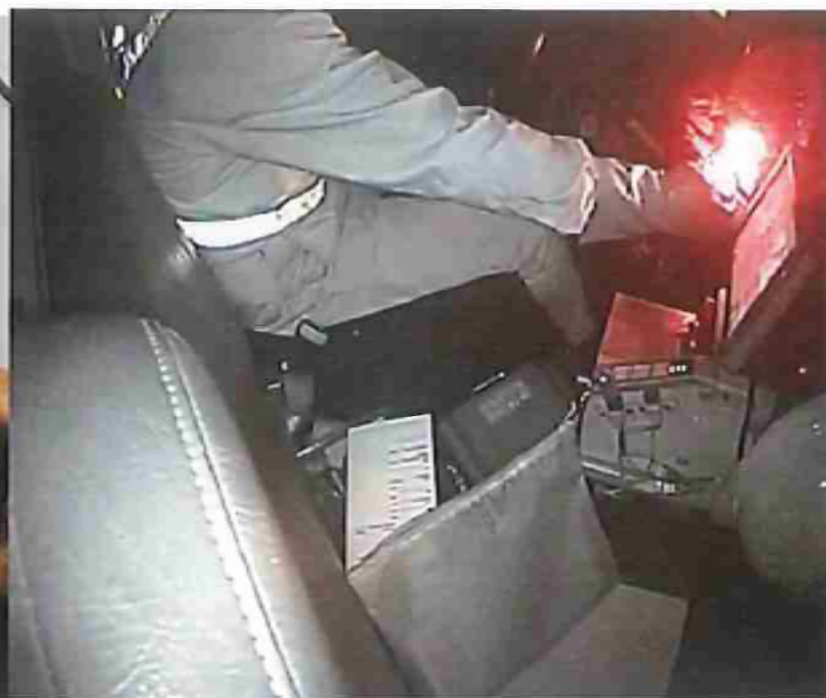
‘Found damage’ reports continue to exceed ‘Reported damage’

- During Winter 2017-18, the percentage of reports that were ‘Found’ or ‘Unreported’ post occurrence, was steady at around 61%.
- During Winter 2017-18, the percentage of reports that were ‘Reported’ at the time the damage occurred was steady around 40%.





飛機加油口受損情形



加油員解除煞車連鎖畫面
(亮紅燈，車子可移動)

(一)直接原因：飛機加油口受損造成漏油。

(二)間接原因：

1.不安全行為：

(1)執行加油作業未遵守加油標準作業程序(SOP)順序，且未將加油管先行拆下後再移動車輛。

標準作業程序：1.距離飛機 15 公尺前停車 2.放置輪檔及三角錐 3.拉安全索 4.裝接進油管及插雙面旗 5.接搭鐵線 6.接加油管；

事故作業程序：1.距離飛機 15 公尺前停車 2.放置輪檔及三角錐 3.拉安全索 4.先接加油管 5.未接妥搭鐵線 6.再裝接進油管、插雙面旗。

(2)在煞車連鎖(INTERLOCK)鎖定下，加油員未經報備領班，擅自解除煞車連鎖(INTERLOCK)移動車輛。

2.不安全環境或狀況：

油栓車停放位置不佳，造成油栓車進油口與機坪油栓口距離過長無法連接。

(三)基本原因：

1.加油員未落實遵守標準作業程序。

(標準作業程序：1.裝接進油管 2.接搭鐵線 3.接加油管；

加油員作業程序：1.先接加油管 2.未接搭鐵線 3.再裝接進油管)。

2.安全意識不足，加油員擅自解除煞車連鎖(INTERLOCK)。

三、地面安全管理-法規及合約

- 民航通告120-009A (2001/12/27)
- IOSA
- ISAGO
- AHM
- IGOM



民航通告120-009A

- 目的
 - 本通告旨在提供航空公司對所委託地勤服務公司（航空站地勤業）在機坪執行航空器地面勤務工作時建立督察工作指引，以確保該作業符合地面作業安全規定及作業實施細則標準，避免因地勤業工作人員作業疏失，導致航空器之飛、地安事件，進而影響航空器之適航性。
- 委託地勤服務公司前之督察：對欲委託地勤服務公司完成評估確認可符合委託者之規定與標準。
 - 航空器地勤作業手冊之符合應包括
 - ✓ 組織、人力編制與業務職掌
 - ✓ 公司品質政策及標準作業程序（需符合航空站作業規定）
 - ✓ 受委託之飛機相關資料（含機型、客貨艙配置、艙門之操作、行李、貨物、盤櫃裝載操作、拖桿裝拆、清洗飛機安全事項、安全銷拆裝位置、地面導引、作業安全事項等）
 - ✓ 裝備車輛（功能用途、保養情況、作業安全事項等）
 - ✓ 清洗飛機裝備（裝備保養、清洗溶劑規定、安全防護事項、清洗程序等）。
 - ✓ 人員訓練及訓練記錄程序（作業車輛操作使用、作業區域作業路線之熟悉、緊急應變計畫、緊急通報程序、飛機基本認識與艙門操作、安全觀念、以往事件情況及維護資源管理（MRM）等）。

民航通告120-009A

➤ 文件紀錄檢查：

- ✓ 委託合約有效及報局核備紀錄
- ✓ 航空站地勤業許可證
- ✓ 人員訓練紀錄
- ✓ 緊急應變計畫及事件發生通報程序單
- ✓ 檢查缺點紀錄

➤ 現場檢查：

- ✓ 飛機之拖引、地面導引、艙門之開關、航空器之清洗、貨物之裝卸以及起落架安全鎖裝置等，**是否依地勤作業手冊之標準作業程序執行**
- ✓ 航空器地面停留時間內**作業人力配置**能完成指定工作
- ✓ 航空器落地後停置地面之地面安全（含地面車輛及其他不安全物之接近等），**有專人負責**以確保後續適航安全
- ✓ 操作車輛裝備人員**持有合格機場執照**並經公司授權操作

民航通告120-009A

➤ 委託地勤服務公司後之督察

- ✓ 排定後續督察時程
- ✓ 航空器地勤作業手冊修訂情況
- ✓ 文件紀錄檢查
 - ❖ 委託合約有效及報局核備紀錄
 - ❖ 航空站地勤業許可證
 - ❖ 人員訓練紀錄
 - ❖ 緊急應變計畫及事件發生通報程序單
 - ❖ 檢查缺點紀錄
- ✓ 現場檢查
 - ❖ 飛機之拖引、地面導引、艙門或其他檢查門之開關、航空器之清洗、貨物之裝卸以及起落架安全鎖裝置等，是否依地勤作業手冊之標準作業程序執行
 - ❖ 航空器地面停留時間內作業人力配置能完成指定工作
 - ❖ 航空器落地後停置地面之地面安全（含地面車輛及其他不安全物之接近等），有專人負責以確保後續適航安全
 - ❖ 操作車輛裝備人員持有合格機場執照並經公司授權操作

IOSA介紹

- IOSA是IATA Operational Safety Audit的簡稱，由「國際航空運輸協會」(IATA) 於2001年開始發展的運行安全查核(審計)計畫，為目前國際間公認之業界安全查核標準。依據IATA國際航協要求，目前全球280家會員航空均須通過IOSA認證，且每兩年必需重新認證，目的為提升飛航安全層級及減少各航空公司間的查核。
- IOSA查核標準涵蓋 ICAO ANNEX 1,2,6,8,17,18,19中安全及保安相關規定與航空業界的最佳做法(safety and security provision and industry best practice)
- IOSA Program自2003年的九月開始，2010年依ICAO對SMS的要求，將SMS規範融入各項運行功能查核內容中。



IOSA介紹

IOSA Audit Scope

ORG – Organization & Management System

FLT – Flight Operations

DSP – Operational Control and Flight Dispatch

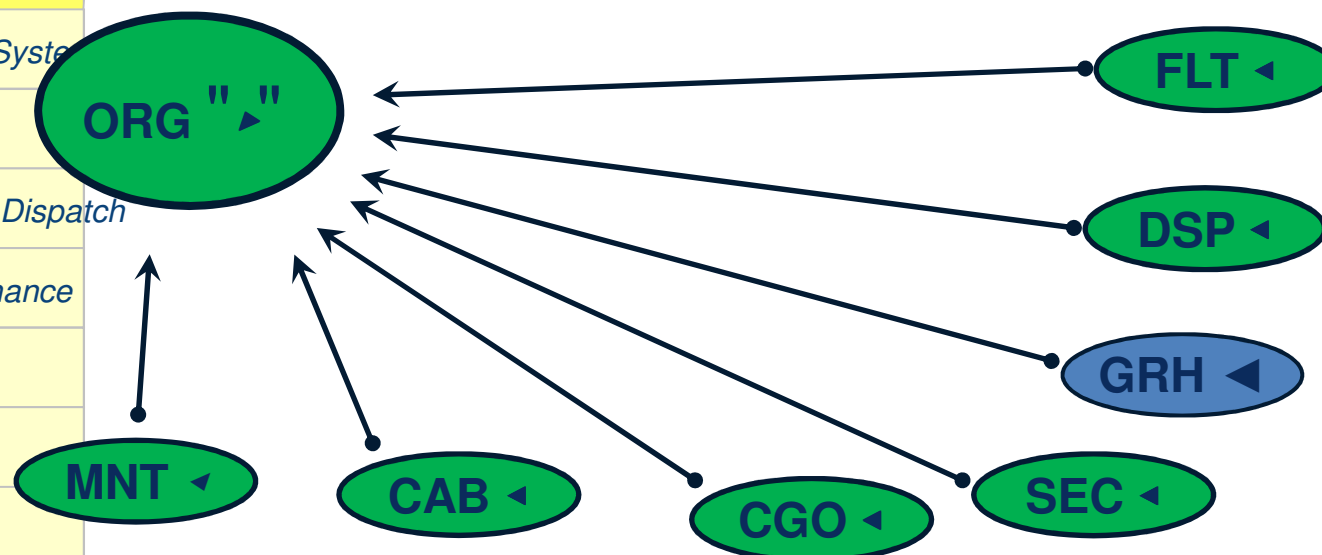
MNT – Aircraft Engineering & Maintenance

CAB – Cabin Operations

GRH – Ground Handling Operations

CGO – Cargo Operations

SEC – Security Management



IOSA查核內容包含航空公司八大運行層面，共1000多項條文，涵蓋各項運行層面與組織管理面(ORG)，著重彼此間的關聯性，包括

- 管理延續性(Management continuity)
- SMS的有效性(Effectiveness of SMS)
- 品保計畫(Quality Assurance Program)
- 代理商監督與管理(Monitoring of external service providers)

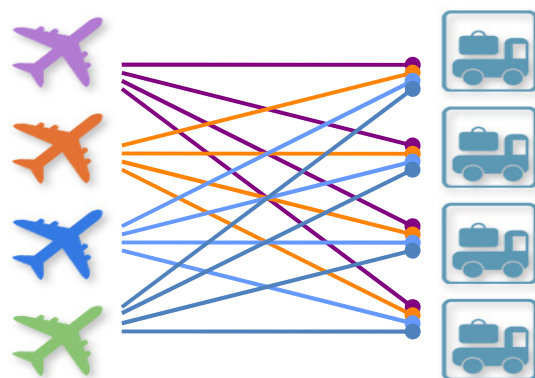
IOSA for External Service Provider



- ORG 1.6.6 If the Operator outsources operational functions to **external service providers**, the Operator should have a program that ensures personnel of external service providers are **trained and competent to perform SMS duties**. The scope of such training should be appropriate to individual involvement in the Operator's SMS.(人員須有SMS訓練)
- ORG 3.5.1 The Operator shall have **processes** to ensure a **contract or agreement** is executed with external service providers that conduct outsourced operational functions for the Operator. Such contract or agreement shall identify the application of **measurable specifications** that can **be monitored** by the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled by the service provider.(依合約監督及訂定量測方式)
- ORG 3.5.2 The Operator shall have processes to **monitor** external service providers that conduct outsourced operational functions for the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled.(對代理商持續監督確保符合要求)
- ORG 3.5.3 The Operator should include **auditing** as a process for the monitoring of external service providers in accordance with ORG 3.5.2.(對代理商執行查核)

ISAGO介紹

- ISAGO是IATA Safety Audit for Ground operation的簡稱，由「國際航空運輸協會」(IATA)於2007年開始發展的地面運行安全查核(審計)計畫，為目前國際間公認之業界地面作業安全查核標準，目前為自願參加認證。依據IATA國際航協資料，目前已執行過1200次查核認證，且每兩年必需重新認證，目的為提升地面安全層級及減少各航空公司間的查核。
- ISAGO查核標準涵蓋AHM、IGOM中安全及保安相關作業標準規定與航空地勤業者的最佳做法(safety and security provision and industry best practice)
- ISAGO Program自2019年開始，依ICAO對SMS的要求，將SMS規範融入各項運行功能查核內容中。



IOSA 與 ISAGO查核範圍

IOSA Standards Manual

ORG – Org&Mgmt System

FLT – Flight Operations

DSP – Flight Dispatch

MNT – A/C Eng.&Maintenance

CAB – Cabin Operations

Ground Ops

GRH – A/C Ground Handling

CGO – Cargo Operations

SEC – Operational Security

ISAGO Standards Manual

OMS – Org&Mgmt Systems

AMS – Airside Mgmt&Safety

PAX – Passenger Handling

BAG – Baggage Handling

CGM – Cargo&Mail Handling

HDL – A/C Handling&Loading

AGM – A/C Ground Movement

Ops

LOD – Load Control

CAT – A/C Servicing&Catering

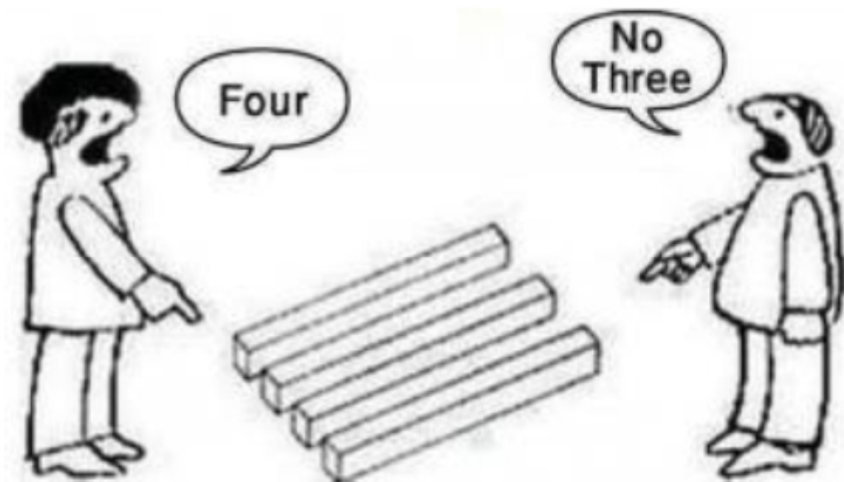
FUL – A/C Fuelling

DEI – A/C De/Anti-Icing

↗ **ISAGO**提供地面作業上更多及更完備的作業標準

AHM與IGOM

- 針對相同機型，各航空公司的地面操作程序不盡相同，有各自的標準及做法。
- AHM及IGOM的發展旨在減少地面作業程序的複雜性及統一地面操作流程，提高效率及降低安全隱患。



Airport Handling Manual



- Passenger Handling
- Baggage Handling
- Cargo/Mail Handling
- Aircraft Handling and Loading
- Load Control
- Management and Safety
- Aircraft Movement and Control
- Ground Handling Agreement
- Aircraft Handling Ground Support Equipment Specification
- Environmental Specifications for Ground Operations
- Ground Operations Training Program

IATA

Ground Operation Manual



- Passenger Handling Procedures
- Baggage Handling Procedures
- Aircraft General Safety Servicing Operations
- Aircraft Turn-around
- Load Control
- Aircraft Airside Operation Oversight



IATA Ground Operations Manual (IGOM)

Effective 1 January—31 December 2018



7th Edition

- 標準地勤代理合約

- Artical 5

5.1 The carrier shall supply the Handling Company with **sufficient information and instructions** to enable the Handling Company to perform ots handling properly.

5.10 The Handling Company shall be able to demostrate a **SMS** in use according with IATA AHM 6.10 and/or ICAO Annex19, local and international regulations, or other governing rules.

四、地面安全管理- 危害辨識與風險管理

威脅 Threat

任何『狀況』，會造成作業的複雜化；其若未處置，會降低安全的保障。

[環境因素]：
氣候/天氣、溫度、
光害、噪音、.....

[硬體因素]：
設備、裝備、車輛...

[個人因素]：
經驗、壓力、疲勞
視力、分心、酒精/藥物...

[組織因素]：
訓練、標準程序...

THREAT

疏失 Error

人的行為結果偏離了規定的目標，並產生了不良的影響。

[錯誤/疏失]：
動作/認知/決策錯誤...
操作/溝通/程序疏失...

[違規]：
習慣性/偶發性...

ERROR

危險 Hazard

造成人員傷亡、財產設備損傷、計畫落後。

HAZARD

機會

事故

Accident/Incident



SMS四大要項與12項子項目

安全政策

1. 管理階層之承諾與目標
2. 安全責任
3. 指派關鍵之安全人員
4. 緊急應變協調
5. 安全管理系統文件

風險管理

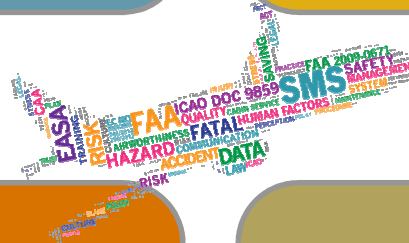
1. 危害識別
2. 安全風險評估與改善

安全推廣

1. 安全教育訓練
2. 安全溝通

安全保證

1. 安全績效監測與測量
2. 改變管理
3. 持續提升安全管理體系



台灣虎航安全管理系統-管理架構

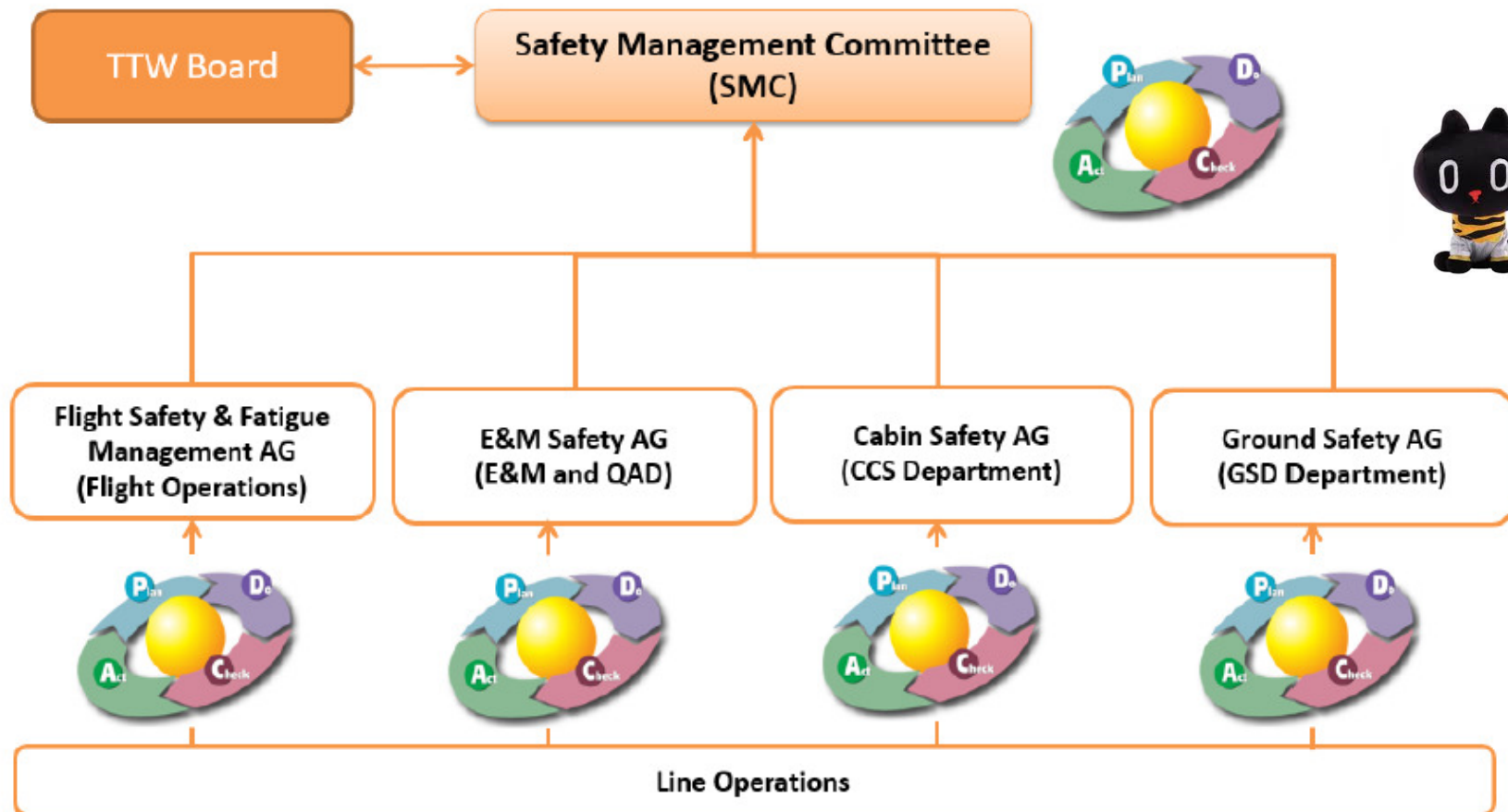
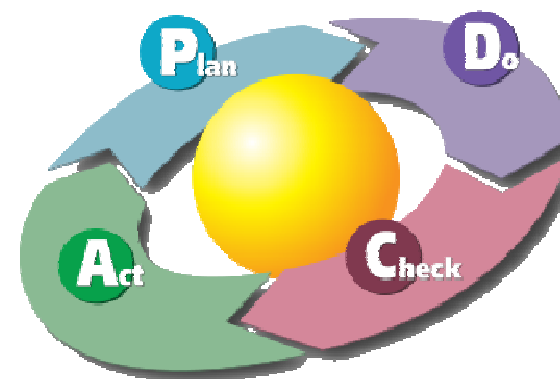
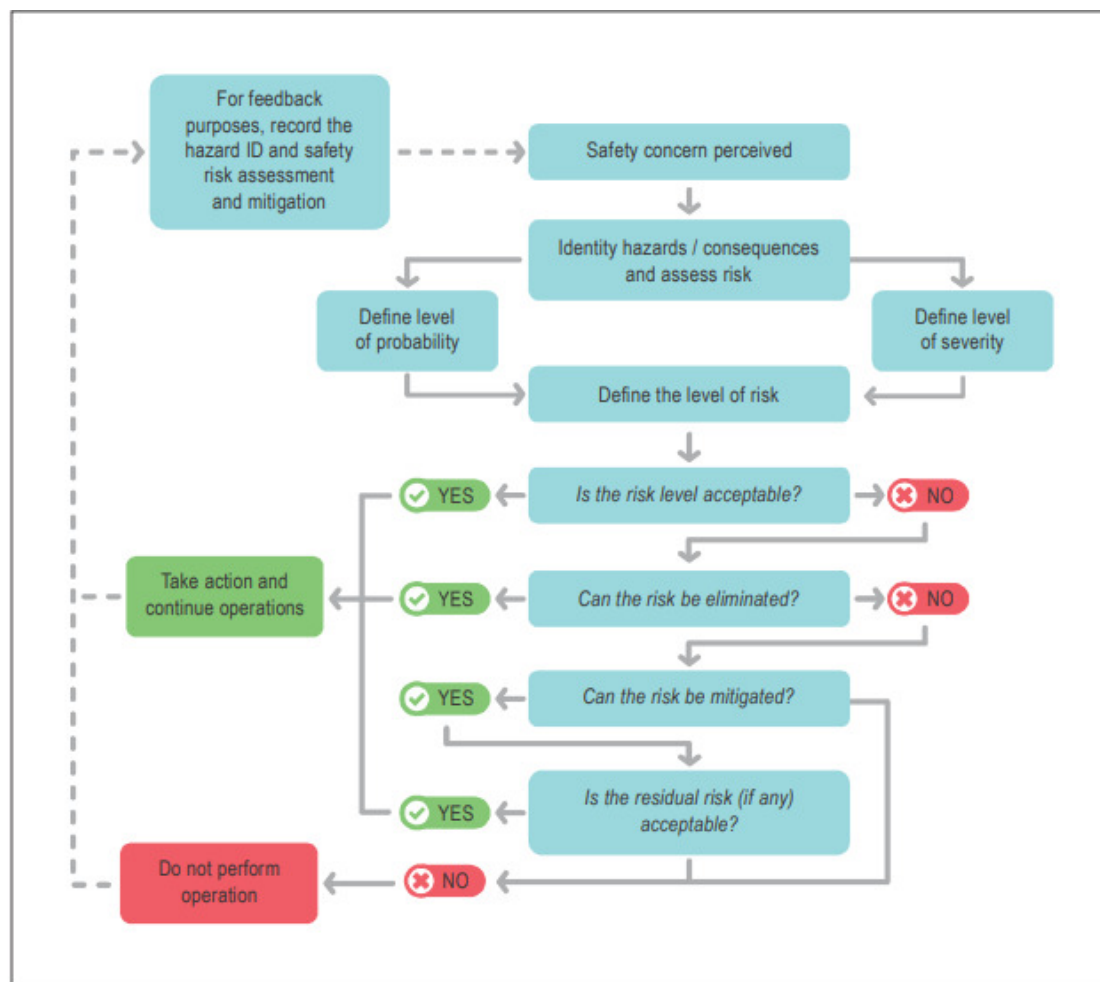


Figure 2.3 Tigerair Taiwan's Safety Action Group (SAG) Chart

台灣虎航安全管理系統-風險管理



辨認風險
→評估
→緩解
→持續改善

ICAO 9859 Safety Management Manual

危害辨識與風險管理



達拉斯貨機坪(DFW Apron) 無畫設 ERA Marking

地面裝備 GSE 淨空不足

危害在哪裡...
不安全事件
不安全條件



風險管控：

1. 場面 fod 檢查；
2. 將 GSE 退至消防車道(fire line)邊線，以保持最大場面淨空安全區域，以確保航機進坪運行安全。

Part IV 安全提升案例分享



台北站關艙門影片



風險辨識與評估

背景

- ✓ 2018-2019年陸續開航數個場站，新站地勤代理對程序不熟
- ✓ 2018年數起安全報告，地勤代理場站未能落實配合開關艙門檢查及Thumbs Up
- ✓ 該項目列為2019年的SPI管控
- ✓ 然而到2019/1及2019/2，兩個月已發生兩起，項目已超標，需要採取改善措施

S/N	2019 Secondary Safety Performance Indicators (GSSD & GOD)	2019 Event Count				2019 Target	Result
		FEB		Total		per 1000 cycles	
		FLT:	1404	FLT:	2899		
4.1	Seat assignment error	0	0.000	0	0	0.801	Pass
4.2	Standard procedure of cabin door was performed incompletely by ground staff	2	1.425	2	0.690	0.515	Fail
4.3	Ground staff checked in baggage to wrong destination	0	0.000	0	0	1.109	Pass

風險緩減措施（一）

- 2019/3修訂GSM，要求確實落實檢查及Thumbs-up程序
- 2019/5發布通告圖示做法

	Ground Services Manual	Chapter 11	11 - 53
	RAMP OPERATION & AIRCRAFT HANDLING	Rev. 04	25 Mar 2019

11.10.2 CLOSING FOR THE CABIN DOOR

Cabin Crew is responsible for closing the passenger door. A clearance from the ground staff is to be given before the door locks are released.

After the cabin door has been closed:

- (A) Cabin crew must check the Door Locking Indicator to confirm the door is well closed and locked.
- (B) GHA Check the door frame.
- (C) GHA Check the area clear.
- (D) **Thumbs up gesture as signal to cabin through door window, and ensure crew acts same gesture as response that indicates door is well closed, before leaving.**

	Ground Services Instruction (GSI) CIRCULAR NO: TTW/005/2019	Issued by: YI HUI TSUI (Director of services)	Issue Date: 20/MAY/2019
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4. **"Thumbs up gesture"** to cabin through door window, and **ensure crew acts same gesture** as response that confirms both end is acknowledged of ready for opening.



5. Open the cabin door slowly and carefully in accordance with the instruction of GSM.



6. Give cabin crew clearance to disembark by thumb up.

B. CLOSING FOR THE CABIN DOOR (Reference : Chapter 11.10.2 of GSM Rev.04)

1. Make sure the cabin door is well closed and locked by cabin crew after servicing is completed.
2. Check the door frame and make sure there is no obstructions around the door area.
3. **"Thumbs up gesture"** as signal to cabin crew through door window, and **ensure crew acts same gesture** as response that confirms the door is well closed **before leaving**.



Remark:
Following the standard procedure and staying with good communication are crucial for successful safety in operation, please bring this GSI 2019-005 in your daily briefing and share to all team members.

CIRCULAR NO. TTW/005/2019 must be read, signed, and filed at each station.

風險緩減措施（一）之成效評估

風險未減緩

- ✓ 2019/1-2019/5，已有10起安全報告，顯示通告未能減緩發生頻率
- ✓ 經分析，發生艙門操作異常頻率較高之場站：MFM、DMK、CEB、KLO

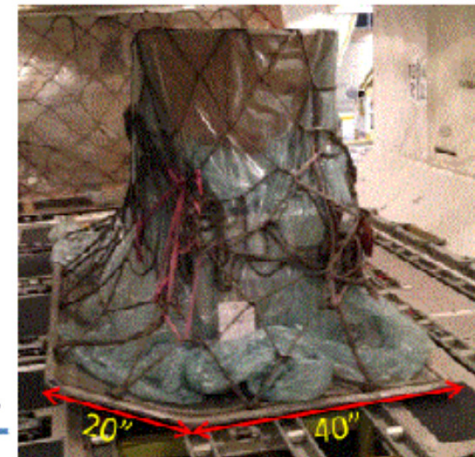
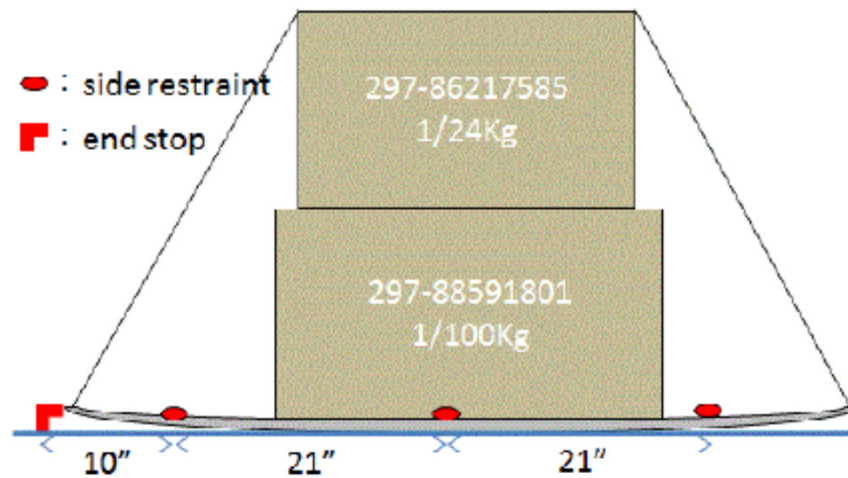
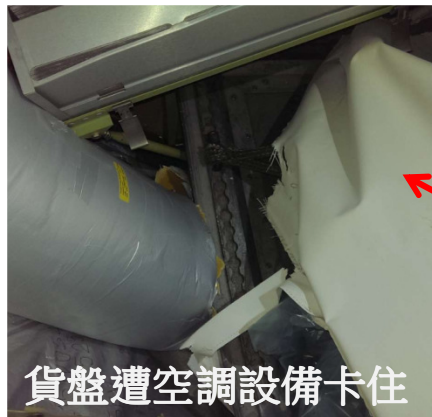
S/N	2019 Secondary Safety Performance Indicators (GSSD & GOD)	2019 Event Count				2019 Target	Result
		May		Total		per 1000 cycles	
		FLT:	1534	FLT:	7454		
4.1	Seat assignment error	0	0.000	0	0	0.801	Pass
4.2	Standard procedure of cabin door was performed incompletely by ground staff	1	0.652	10	1.342	0.515	Fail
4.3	Ground staff checked in baggage to wrong destination	1	0.652	2	0.268	1.109	Pass
4.4	Passengers on-board the wrong shuttle bus / aircraft	0	0.000	0	0	0.367	Pass
4.5	Incorrect of Final Load Data	0	0.000	0	0.000	0.184	Pass
4.6	Boarding gate security irregularity by human error	0	0.000	0	0	0.583	Pass
Total		2	3.914	12	1.689		

Remark

4.2 – IT220/05May

4.3 – IT310/10May

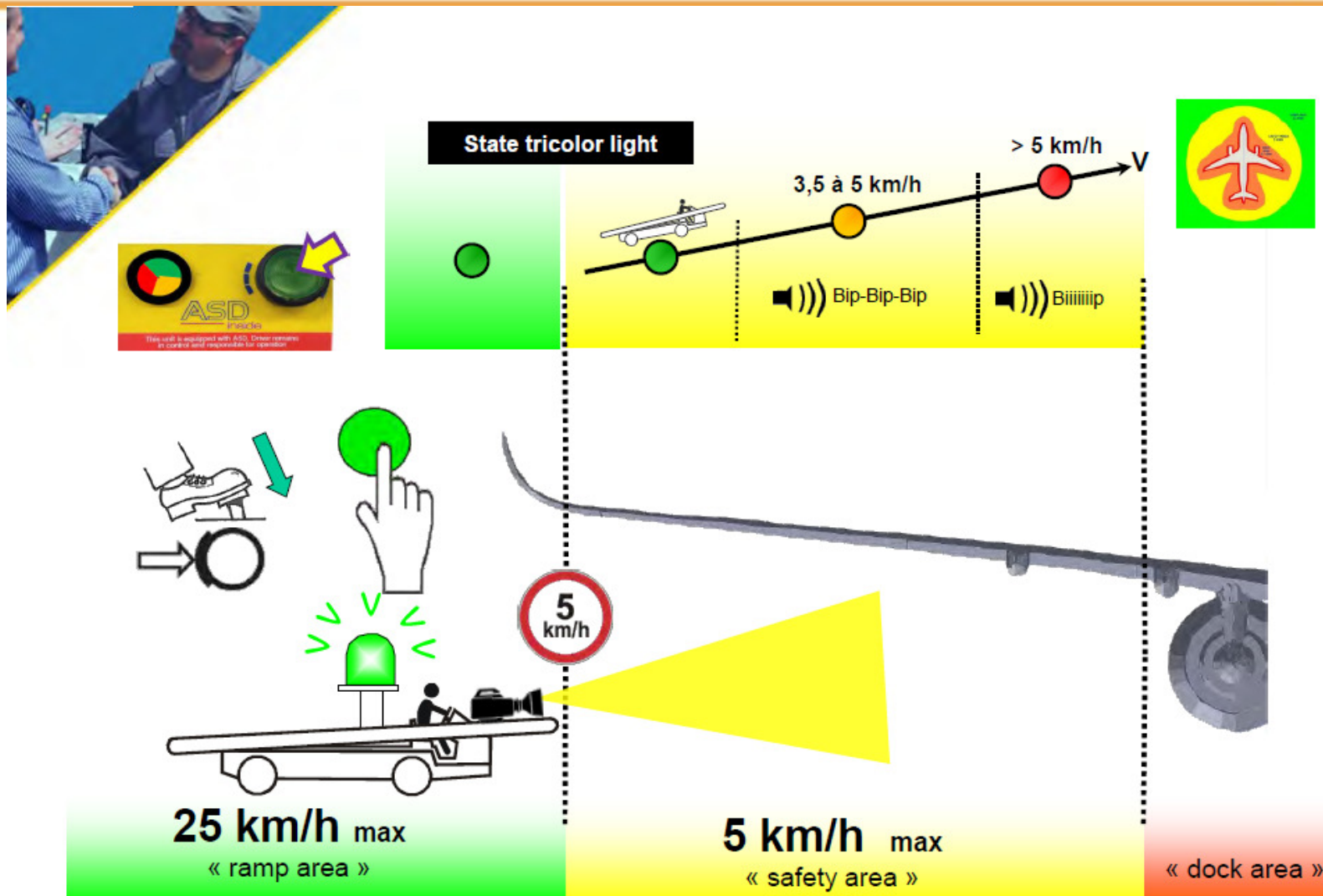
危害辨識與風險管理



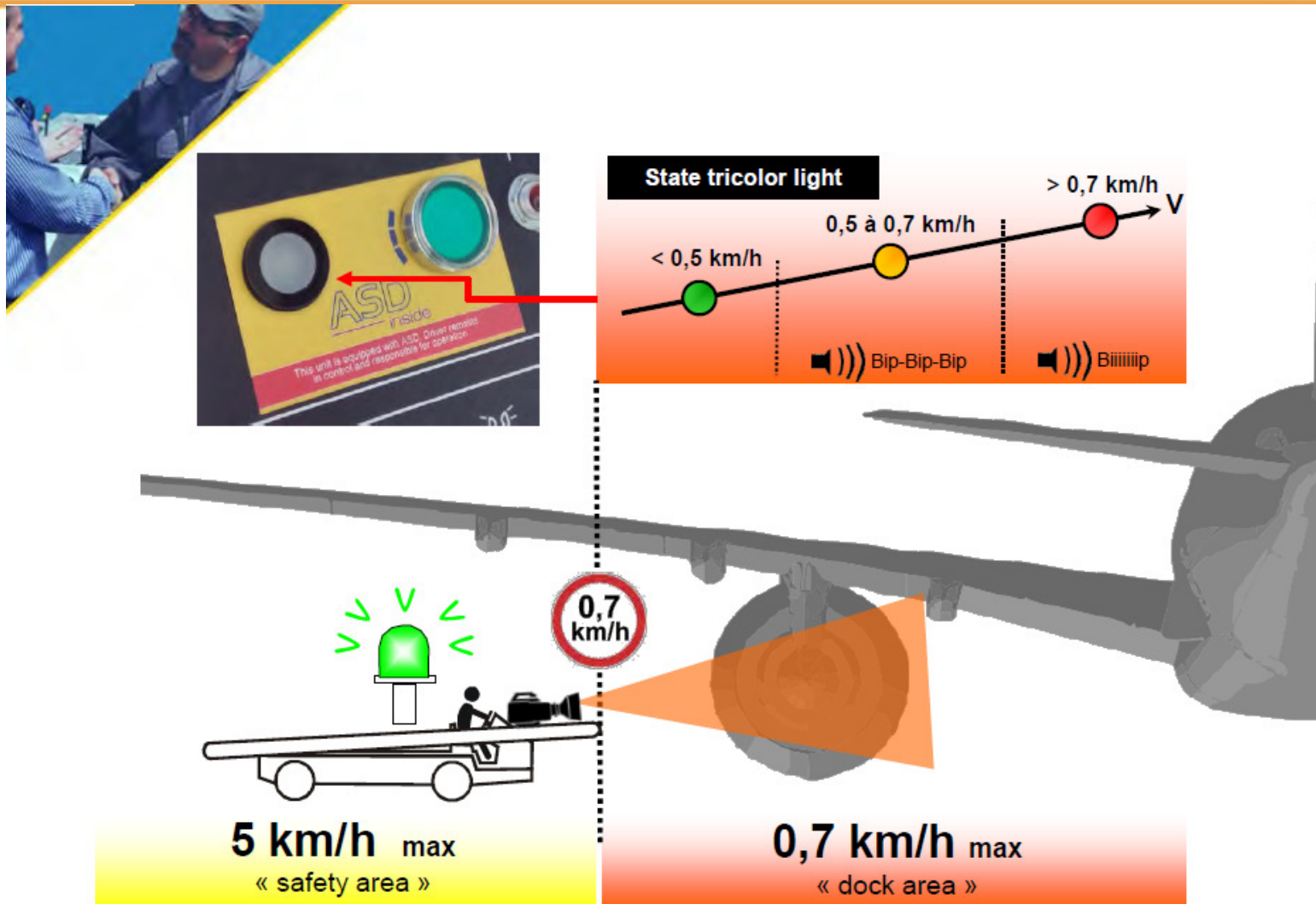
危害辨識與風險管理



新科技的運用



新科技的運用



新科技的運用



五、地面安全管理 - 安全保證

品質管理，要的是什麼

地面安全，依據的是什麼

『品質』的核心是什麼

稽核過程，想要確定什麼

公司要如何監督地勤代理公司

『品質』要去哪裡找

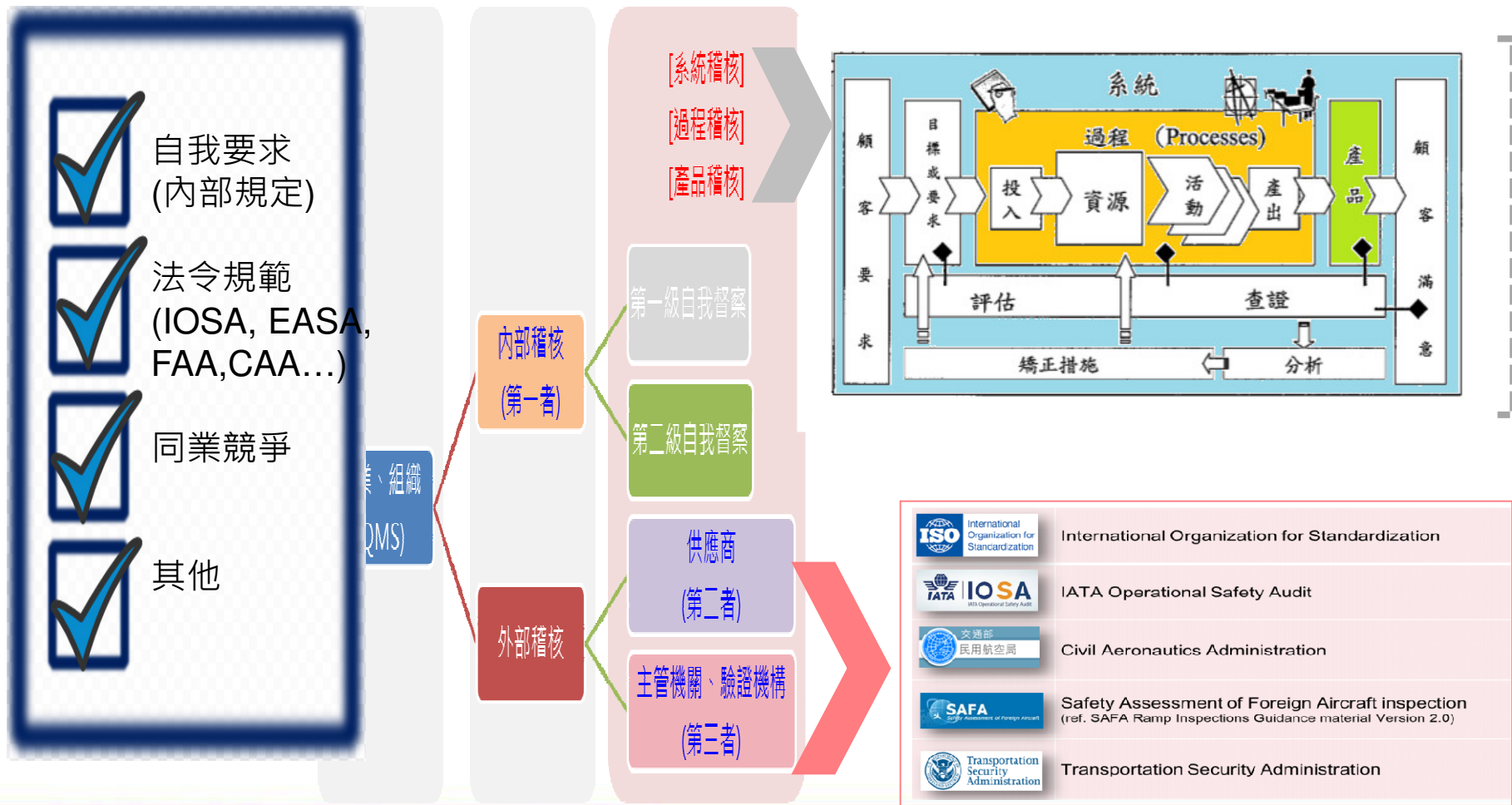
WHAT DO YOU WANT?



安全管理與安全保證

稽核目的

稽核類別



安全保證計畫

- 透過安全品保查核計畫，確保公司
 - 符合法規及標準(Complying with applicable regulations and standards)
 - 滿足運行的安全需求(Satisfying stated operational needs)
 - 辨識需改善的領域(Identifying areas requiring improvement)
 - 辨識運行的危害因子(Identifying hazards to operations)
 - 評估安全風險控管的有效性(Assessing the effectiveness of safety risk controls)



『品質管理系統』與『稽核基礎』

前置準備



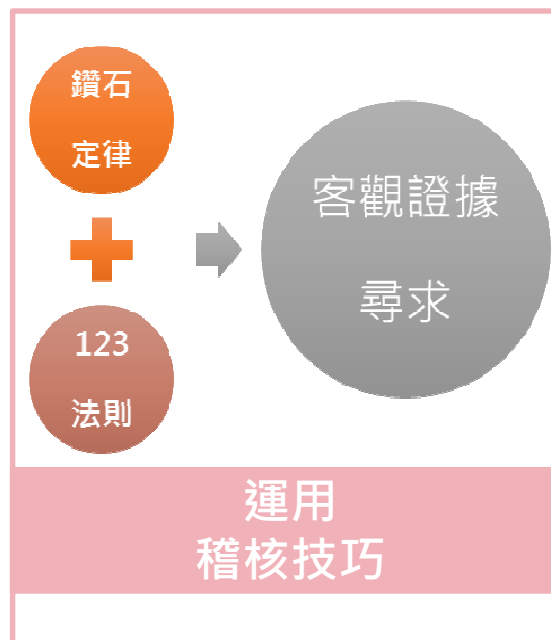
- ✓ 查核計劃
- ✓ 查核對象
- ✓ 查核範圍

稽核前規劃的待查要項，以做為現場稽核的依循。



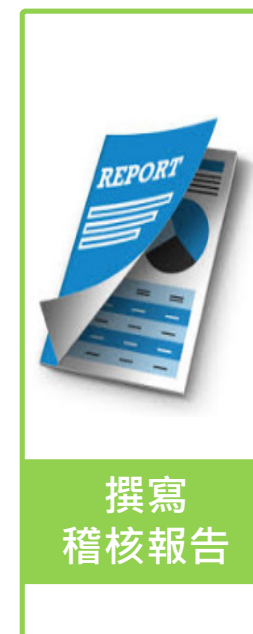
- ✓ 依「系統標準要求」訂定查核點
- ✓ 依「顧客/法規要求」訂定查核點
- ✓ 依「產業特質」強調查核點
- ✓ 依「程序關連」延伸查核點
- ✓ 依「持續改善」缺點複查

稽核過程



- ✓ 不要逾越系統稽核範疇。
(系統觀：目的、連結、秩序、循環)
- ✓ 不要執著技術性議題(個人見解)。

稽核結束



- ✓ 完成稽核
- ✓ 後續稽核跟催

『品質管理系統』與『稽核基礎』

確認稽核準則
查核範圍、對象、計畫

EX. ORG 1.5.2 The Operator shall have processes to monitor and assess its SMS processes in order to maintain or continually improve the overall effectiveness of the SMS. [SMS] (GM) ▶

準備查核表
checklist
法令法規、持續改善

EX. Does the station manager and staff have received proper training for implementation of SMS to ensure station operation safety?

運用稽核技巧
鑽石定律
123法則

- 
1. 訪談：如何改善安全管理系統？(開放性提問)
 2. 觀察：實際作業內容(如有建立文件化、報告系統、人員訓練、管理會議、事件調查及追蹤...etc)。
 3. 查核：抽查程序或紀錄。
 4. 評估：符實際執行情況與訪談內容之符合性/落實性。
 5. 紀錄：稽核事實。

- 
1. 有沒有：經由問答，確認有沒有執行。
 2. 對不對：所提出的證據與所說的、實際執行的內容是否相符。
 3. 穩不穩：抽有沒有持續的被執行(如人員有無定期複訓、有無定期開會)。

撰寫稽核報告
稽核跟催(CAR)



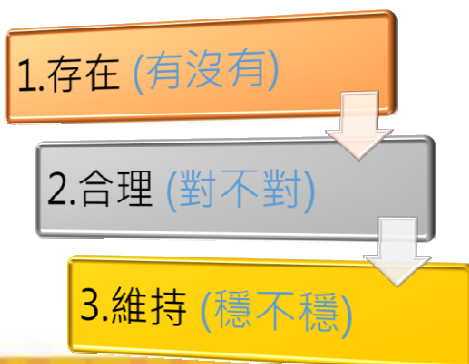
『品質管理系統』與『稽核基礎』

稽核過程尋找及確認...

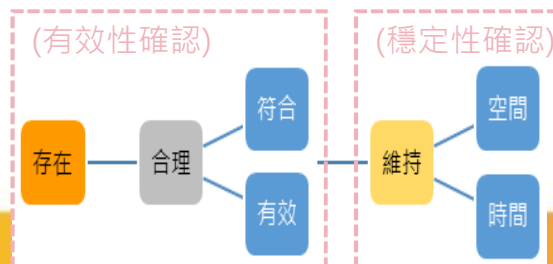


- ex (開放)文件如何被管制? (封閉)文件有管制人員簽名?
- ① 訪談：開放性與封閉性提問，以客觀了解作業情況。
 - ② 觀察：實際作業內容，確認與規劃相符。(觀察常態對象)
 - ③ 查核：相關程序或紀錄，確認落實性、一致性及正確性。
 - ④ 評估：符合性及落實性。
 - ⑤ 紀錄：稽核事實。

稽核的基本動作
確認組織系統的『符合性與落實性』

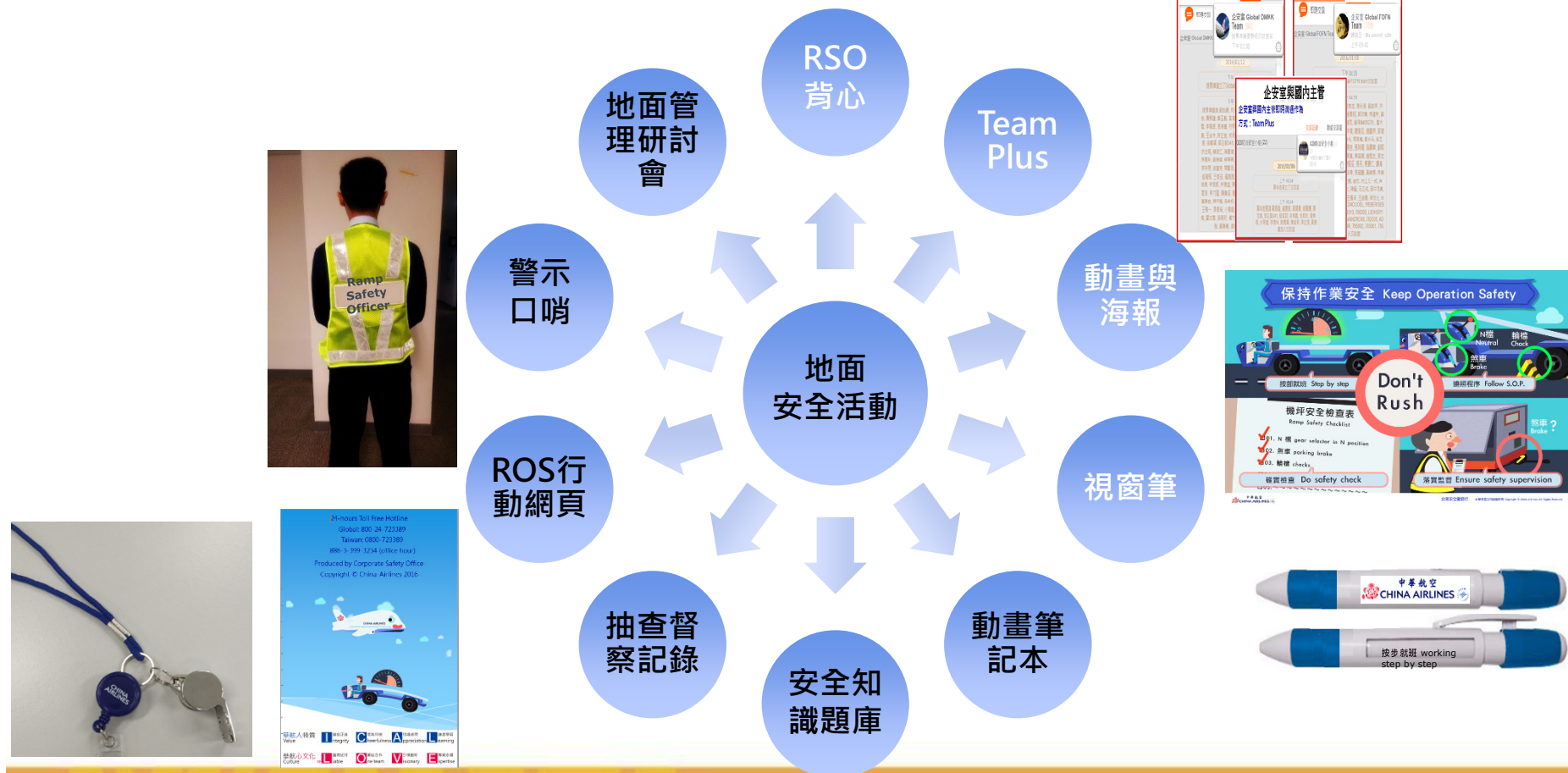


稽核的深度確認
確認組織系統的『有效性與穩定性』



五、安全提昇

為提升整體 GDI 防範意識，透過『地面安全活動』；藉由各項活動持續提醒並落實督導機制。



安全提昇-教育訓練



- Ramp Safety and Security
- Standard Turnaround Time
- Foreign Object Debris/Damage (FOD)
- PDA, Parts Departing from Aircraft
- Marshalling and Wing Walker
- Safety Cones and Chocks
- Ground Support Equipment (GSE)
- Fueling Safety Zone
- A320 Cargo Door Operation
- Adverse Weather Condition
- De/Anti-icing

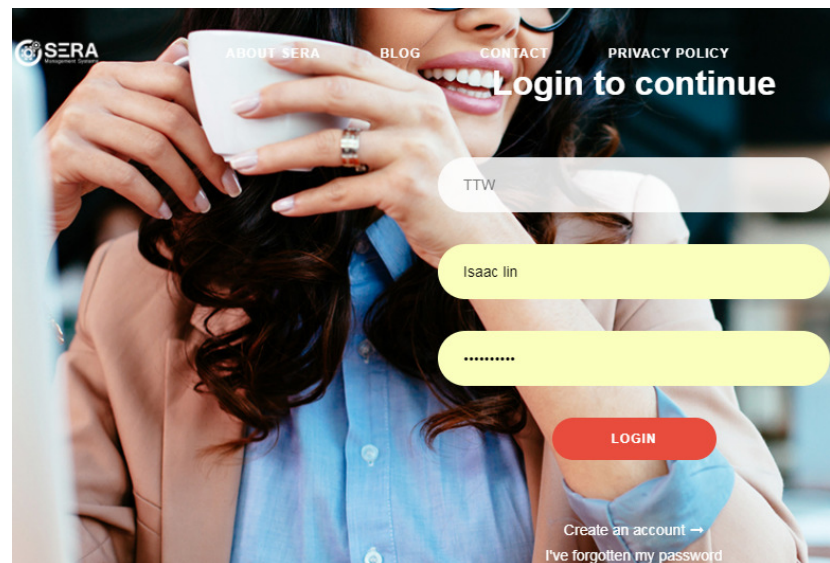


Report Channel, SERA System

All accident, safety incidents, and safety hazards must be reported to Tigerair Taiwan.

SERA is our report channel, it could file a report to SSQE.

The report is to be used to advise the company of any accident, incident or near miss or any hazard relating to Tigerair Taiwan's operations that staff are aware of which **may lead to future accidents.**



GSM 11.1

Aerobridge - Hazard Area!



PPE, Personal Protective Equipment

PPE (below must required)

- ✓ Hearing Protection,
e.g. Ear Plug



- ✓ High Visibility Clothing



- ✓ Safety footwear



- Knee pads for loading purposes when in the hold
- Sun smart clothing - e.g. sunscreen, covered clothing
- In wet weather environments - wet weather gear
- Specific PPE allocated for conducting toilet serving duties

Anti-collision Light



- An aircraft with its engine running will display a flashing red light signal known as an anti-collision light.
- The aircraft anti-collision lights are used as a danger warning to all ground staffs.

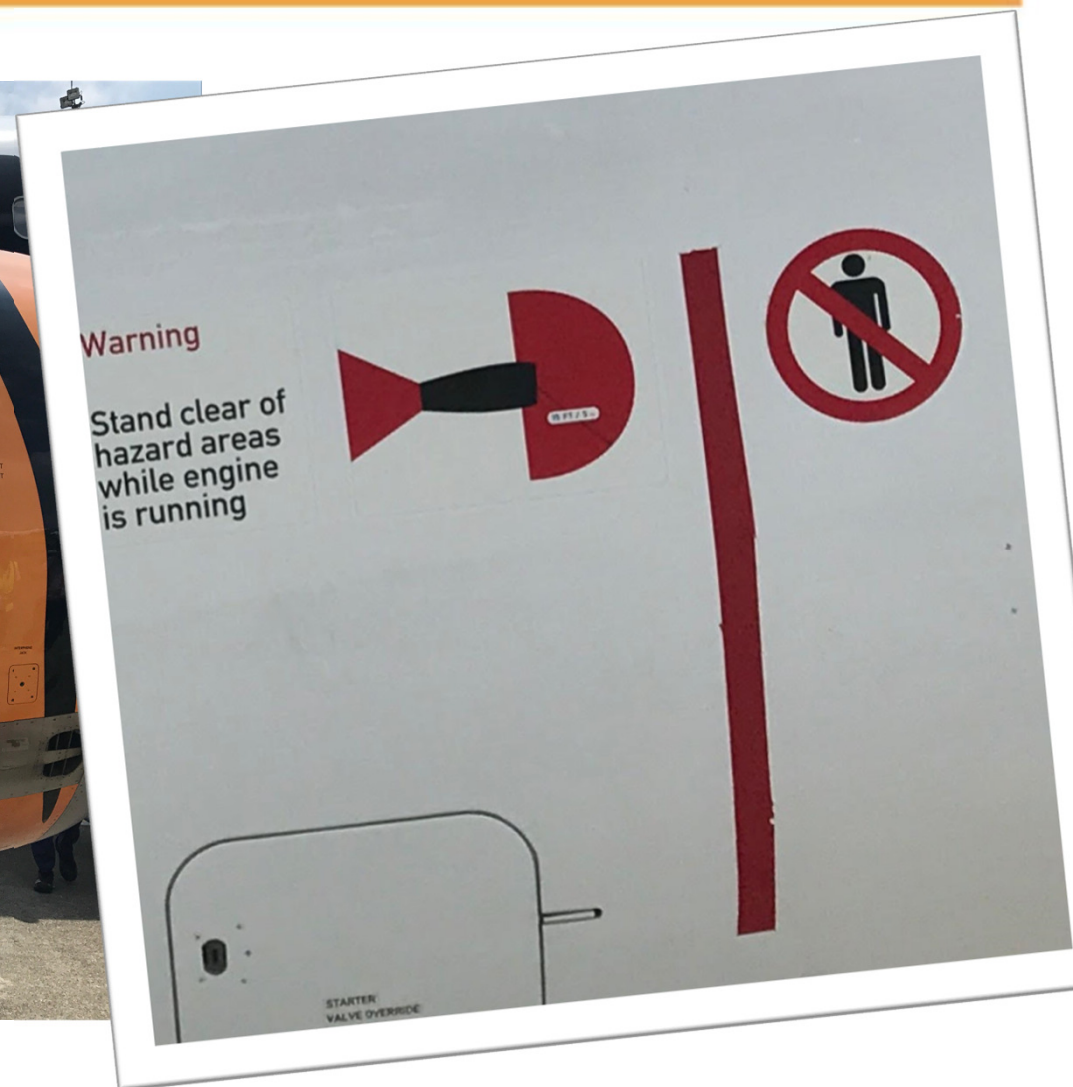
- Ramp staff (not involved in marshalling duties) and equipment approach an aircraft **MUST be waited until the anti-collision lights switched off.**

'ALL CLEAR' Before Approaching An Aircraft



- Aircraft has come to a complete stop.
- Wheels chocked.
- The anti-collision beacon switched off.
- The Marshaller has given the 'safe to approach' signal.
- The Marshaller will indicate to all staff that it is 'all clear' to approach the aircraft.
- The all clear signal is, holding their **thumb up**, fist clenched, and moving their arm through 180 degrees parallel to the ground.

Have you seen this before?



FOD, Foreign Object Damage/Debris



Conduct FOD check **15mins** before flight arrival.



Result of FOD

- Occur to tires.
- May be ingested into aircraft engines causing damage.





Case Study





Case Study



地面安全管理 – 結語



- 任何從事航空事業相關的工作者，都必須接受及學習安全管理系統(SMS)基本訓練，並透過組織型塑優質的安全文化。
- 民航局、航空公司、機場、地勤公司須為提昇整體飛航安全緊密合作。

Safety First



SMS

安全，不只是口號

- 鼓勵所有同仁遇各種風險時，填寫安全報告
- 形成一個遵守SOP的安全文化

**IF
YOU SEE
SOMETHING,
SAY
SOMETHING!**

Report
It!

