From Safety I to Safety II

CDG’s SMS Evolution

Presented by:
Jean-Marc FLON

DSNA / Paris-CDG – Gal Manager ATS
Safety I to Safety II: CDG’s SMS

- Introduction
- CDG’s approach and organisation
- Safety Action Plan KPIs and Results
- Way Forward
- Conclusion
Safety I to Safety II: Introduction

- Evolution of SMS
  - Why

- Background and personal experience
  - ATCO
  - Management
  - CDG’s demands and specific environment
Paris-CDG : specific environment

- **Infrastructure**
  - 2 pairs of runways
  - Single mode operations
  - Over 100 kms taxiways
  - Peak day: 1773 mvts

- Paris-Orly: 20 miles
- City of Paris: 11 miles
- Le Bourget: 2 miles

Constrained environment
TRIPLE PARALLEL RUNWAYS OPERATIONS

1.3 NM

2.0 NM

3.3 NM

LFPB RWY 27

LFPG RWY 27R

LFPG RWY 26L

LFPB 27 EXTENDED CENTER LINE

LFPG 27R EXTENDED CENTER LINE

LFPG 26L EXTENDED CENTER LINE
Safety I to Safety II: Introduction

- Issues
  - Operational regulatory environment
  - Risk and performance management
  - Operational vs Management Safety vision
CDG’s Safety Organisation : 1/3

Safety Assessment:

- CTL’s Safety notifications
- Automatic detection events by thorough analysis of safety nets (STCA, RIMCAS, APW, MSAW)
- Air Safety reports
- Safety division daily analysis and weekly coordination

=> Thorough and comprehensive view of safety issues

Safety Meetings:

- Twice monthly safety events joint analysis and trends
- Monthly follow up implementation ATC’s system modification safety related events, ground events (Airport Operator) and on actions defined
- Every three months follow up on safety action plan
- Every three months sharing with watch managers on safety trends and actions (Safety Steering Committee)
Safety Interfaces:

- Monthly coordination with Airport Operator on common ground safety events and definition of joint action plans.
- Every three months sharing and return of experience between operational controllers and airlines Safety Officers of ground/air interface safety events.
- Bi annual LRST’s meetings and annual Safety Promotion Committee.
- Annual CDG’s Safety meeting with French NSA.
- Specific meetings on CDG’s Winter Plan elaboration and coordination (Runway state assessment, braking action and PIREP procedure) as well as return of experience with airline Safety Officers (Air France, Easy jet, Lufthansa).
CDG’s Safety Organisation: General Overview

Safety Organization:
- General Overview
- LRST
- AREX
- COPIL GPS
- CLS

Airline (AF) SMS

Indicators
- Watch managers Dialogue
- Experts’ suggestions

DSNA SMS

Safety Steering Committee SNARP/ADP

Projects

DSAC (NSA) Winter Review
- Safety Promotion Committee
- Investment Management Committee

DSAC (NSA) Safety Review
- Safety Steering Committee DO / AF

AO (ADP) SMS
Safety Action Plan:

- Triple simultaneous approaches
- Runway incursions
- Risk perception / Risk management
- Night related operational methods

Just Culture
Front line actors’
Sense of responsibility
Evolution of SM Approach:

- Positive and non-judgmental approach
- Defining systemic and individual factors
- Construction of a management process allowing constructive dialogue and bridging gap between operational and management views
- Empowerment of operational Management
- Sharing on Safety performance (Definition Safety KPIs)
- Follow up on Safety action plan and open space dialogue on Safety issues
- Team Safety performance briefings
- Accountability of individuals and operational managers
CDG’s SKPIs and Results 1/6

Risk Management vs Risk Perception:
- Automatic detection and analysis of safety events
- Follow up on CTLs’ Notification Rate (Risk perception)

<table>
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<tr>
<th></th>
<th>HN70</th>
<th>HN50</th>
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<tr>
<td>TOTAL</td>
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<td>12 derniers mois</td>
<td>50%</td>
<td>78%</td>
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Separation Minima Infringement:

- Global reduction of SMIs especially during simultaneous approaches operations
- Global safety analysis with specific care brought to risks due to non-compliant approaches
### CDG’s SKPIs and Results 3/6

#### HN

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<th>Event Type</th>
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### Interception ILS

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<td>2013</td>
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<td>2014</td>
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Runway Incursions:

- Automatic detection and analysis of RI related safety events (RIMCAS) since March 2012
- Dramatic increase in number of RIs especially under category: Conflictual clearances (Safety performance vs Risk perception)
- Intentional vs Non Intentional: Management dialogue on performance
- Definition of different typologies:
  - Type I
  - Type II
  - Type III
- Risk management based approach (Defining in common the marginal boundary)
CDG’s RIs Typologies 1/3

Type I:

SNA - RP CDG ES2 WS02 - 14 Lisboa Sept. 24th. 2014
CDG’s RIs Typologies 2/3

Type II:
Type III:

SNA - RP CDG ES2 WS02 - 14 Lisboa Sept. 24th. 2014
CDG’s SKPIs and Results 5/6

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<td>46</td>
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<td>11,9</td>
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<td>Nombre pour 100 000 mvts</td>
<td>6,3</td>
<td>9,7</td>
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CLAIRANCES CONFLICTUELLES AVION/AVION

- Erreur
- Clairance conflictuelle type 1
- Clairance conflictuelle type 2
- Clairance conflictuelle type 3
CDG’s KPIs and Results 6/6
Specific Actions
Safety I to Safety II: CDG’s Way Forward

CDG’s 2020 Strategy:

- Technical Roadmap
- Global performance targets (Identify how system copes with increased pressure)
- Front line actors involvement and competency

System Performance:

- Comprehensive and thorough Safety Analysis focusing on trade-offs and variability to ensure system’s resilience
  - Analysis system’s global level of safety (SMIs vs NCAs and UAs - RIs)
  - Analysis of global performance and its prerequisites (Identify sources of resilience)
- Improvement Ground – Cockpit Issues
  - Understanding of shared threats management
  - Shared analysis of system’s weak signals and strengths
  - Identification and mutual understanding of system’s “Need to Know”

Management Dialogue / Performance based management:

- Common definition/steering of performance targets and global strategy (OPS Managt)
Safety I to Safety II : Conclusion

In our complex system => Need to ensure Resilience :

• Thorough and comprehensive analysis of safety events and performance
• Accept variability and leave room for operational actors to adjust according to operational demands and conditions
• Identify and reinforce best practices and conditions allowing global performance
• Where possible simplify system and ensure operational actor at the forefront of decision making
• Non judgmental approach but accountability of all actors
• Initiate management dialogue with operational actors
• Give purpose and share on Safety action plan and Safety indicators / Reconcile operational Safety and SMS
• Trade-offs are part of everyday work => Share on risk perception and risk management issues

Safety performance as an enabler of capacity improvement
MERCI!
THANK YOU!