

Use of triple one principle and vehicle driver training at Brussels Airport

EAPPRI Ed. 3.0 Runway Safety Seminar

Lisbon, 18 October 2018

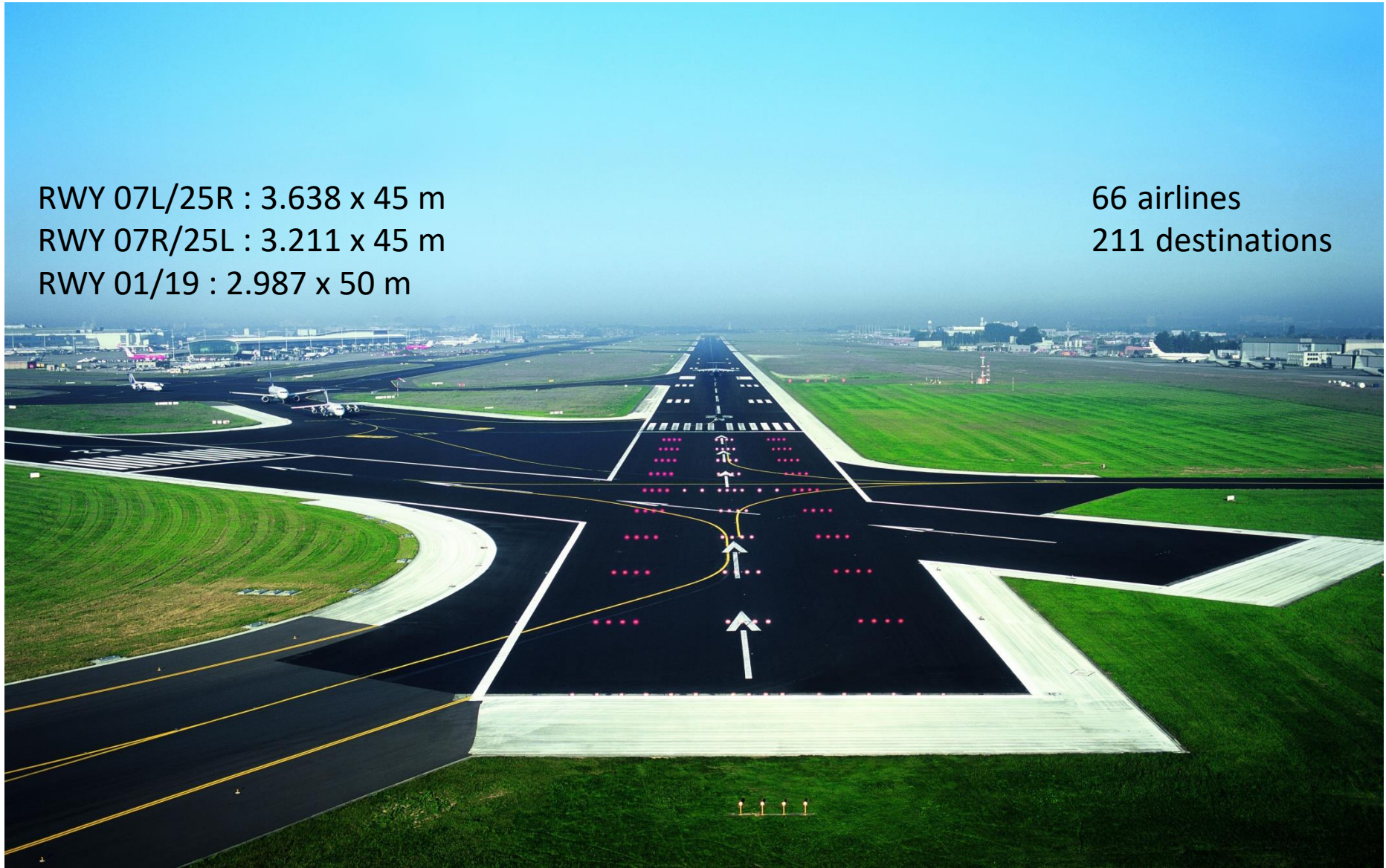
Dirk Geukens, Senior Safety Expert Brussels Airport Company

24,8 Mio passengers
536.000 T cargo
237.000 movements
60,000 jobs



RWY 07L/25R : 3.638 x 45 m
RWY 07R/25L : 3.211 x 45 m
RWY 01/19 : 2.987 x 50 m

66 airlines
211 destinations



Aerodrome layout

AIP Belgium and Luxembourg

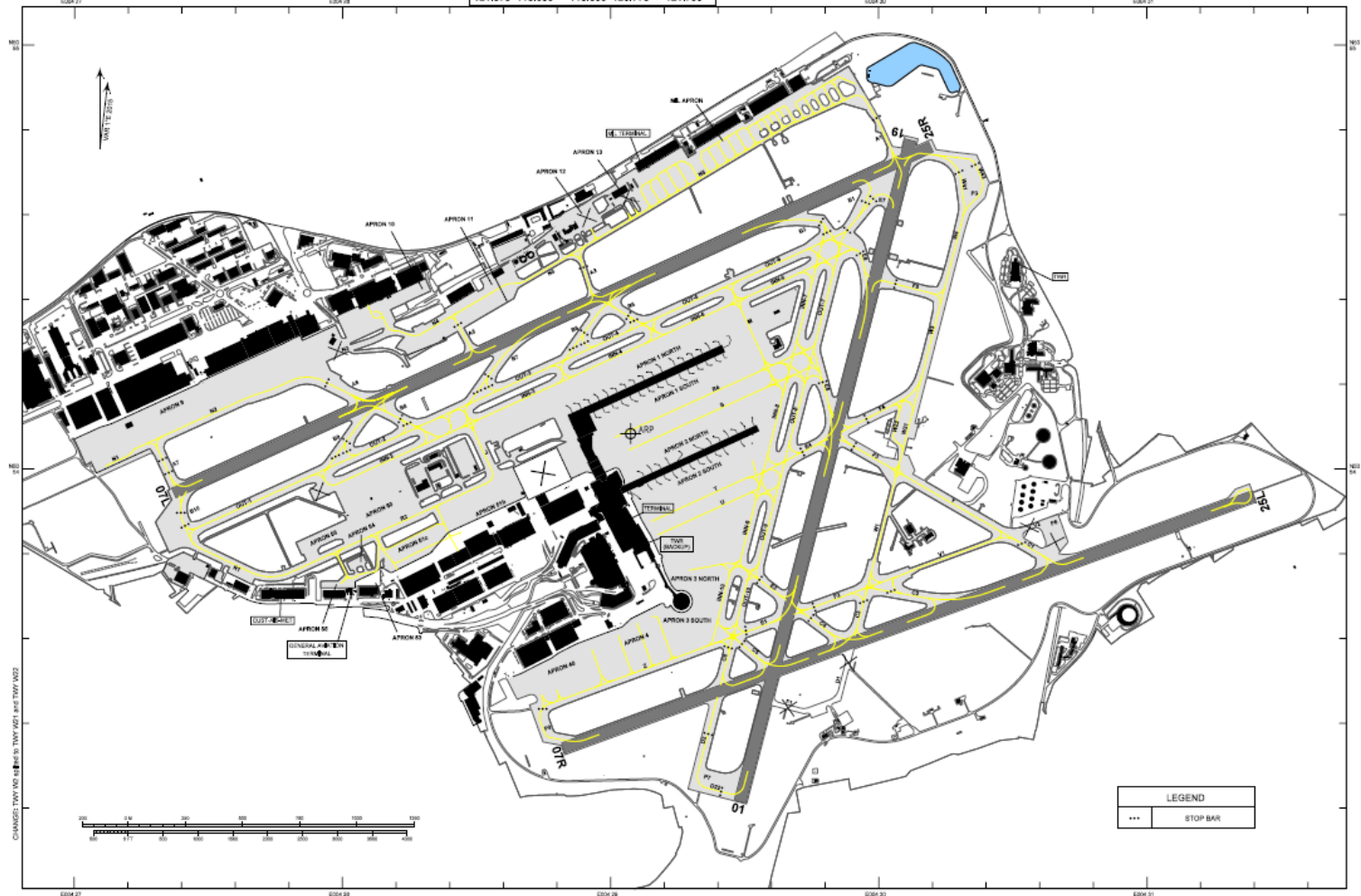
AD 2,EBBR-GMC.01

13-OCT-2016

AERODROME GROUND MOVEMENT CHART - ICAO

GND	TWR	ATIS DEP
121.875 118.050	118.600 120.775	121.750

BRUSSELS / Brussels-National (EBBR)



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AMDT 011/2016

Local Runway Safety Team (LRST)

- **Growing safety culture and pro-active approach**

- **21 October 2002**

First Local RWY Safety Team meeting at BRU

- **Terms of Reference**

- **Chair: Brussels Airport Operations Manager**
- **Secretary: Belgocontrol – ANSP**

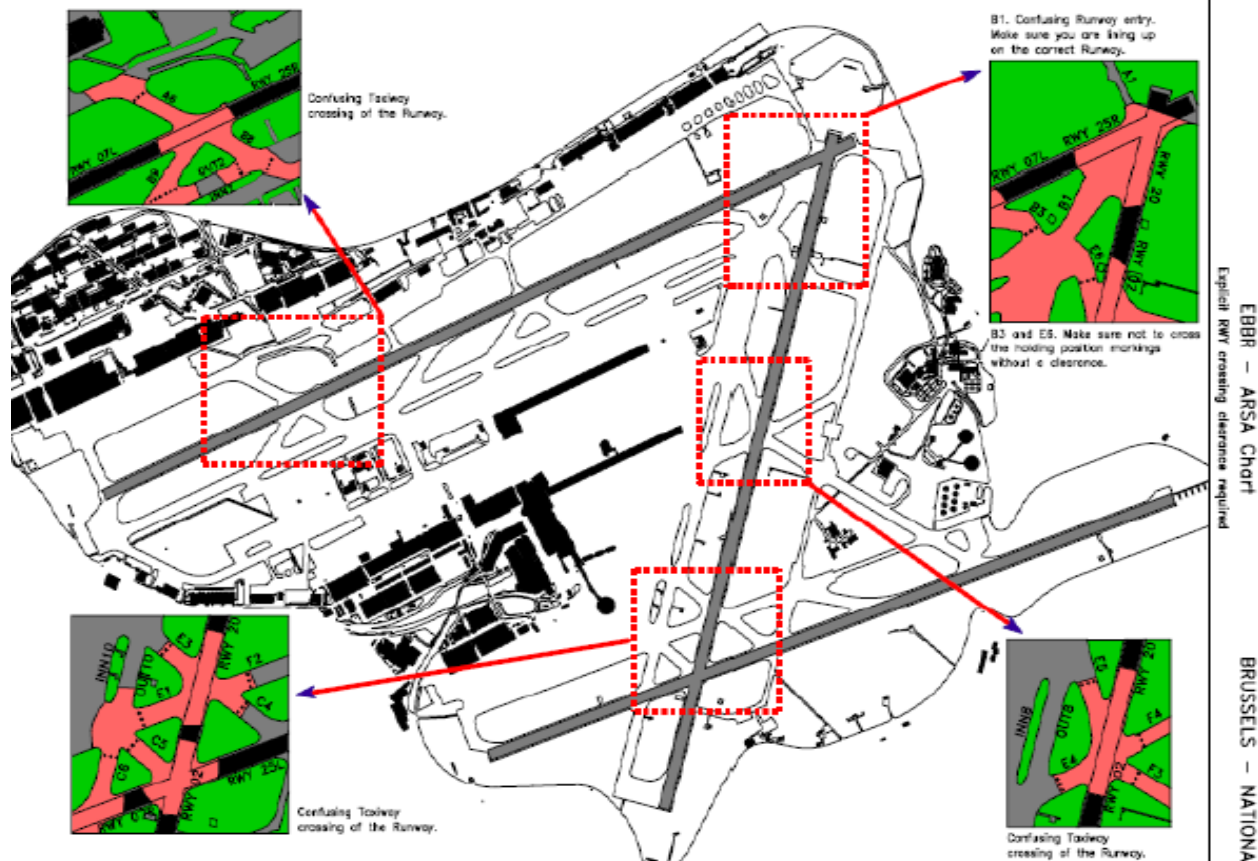
Local Runway Safety Team (LRST)

Goal is a continuous improvement of runway safety

- members of pilots, flight safety officers of home carriers, ANSP, Brussels Airport Company, Military, Federal Police, General Aviation and BCAA
- Meeting frequency is bi-monthly
- work together with other organisations like Eurocontrol, IATA, ACI to put into practice the recommendations of the "European Action Plans for the **Prevention of Runway Incursions**" (EAPPRI) and **Prevention of Runway Excursions**" (EAPPRE)
- record all local problems and questions related to runway safety and the manoeuvring area and formulate proposals for necessary improvements
- investigate runway incursions
- report to Safety Board

HotSpot Map

Areas Requiring Special Attention (ARSA) maps - HOTSPOT



ICAO Doc9870-AN/463 Manual on the prevention of RWY incursions

Triple One Principle

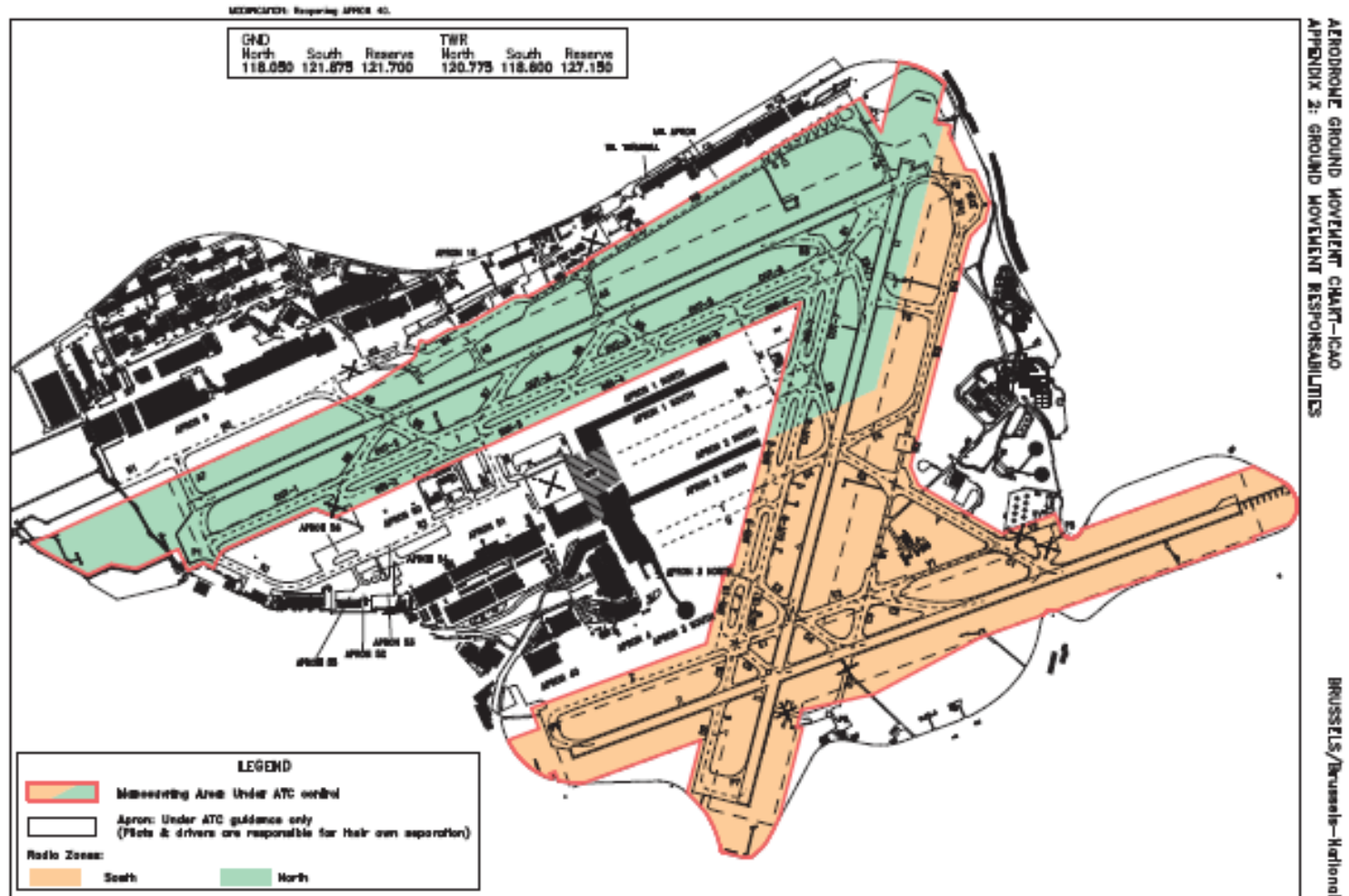
H24 Stopbar use

One Runway, One frequency, One language



Triple One Principle

- Ground Movement Responsibility map



Triple One Principle

- Each vehicle has unique call sign and transponder
- Use of Standard ICAO R/T Phraseology by vehicle drivers
- Robust Training program for 400 vehicle operators



Training program – content

- Theoretical runway safety training curriculum
- Practical training
- Two-yearly recurrent organized
- Yearly recurrent for winter operations sub-contractors

➤ Airport layout

➤ Markings & Signs, Nav aids and use of stop bars H24

➤ Standard ICAO R/T Phraseology (English)

➤ Communication failure procedure

➤ Position Lost procedure

➤ Vehicle breakdown procedure

➤ Vehicle transponder procedure

➤ FOD & Jetblast awareness module

Training program - duration

- **Initial:**

- **Theoretical** 1 day + test 1h

- **Practical** 4 to 8hrs on simulator + test 30min

- **Recurrent :**

- **Theoretical** e-learning 2h + test 1h

- **Practical** 2 to 6hrs on simulator + test 30min

Training program - simulator

- **Airside Driver Training Simulator November 2013**
- **Mobile Driver Simulator February 2017**

Airside Driver Training Simulator

- More training opportunities with less operational risks & saving resources



An instructor working with a trainee driver. The instructor has an intuitive touch-screen interface to control background radio conversations.



Airside Driver Training Simulator

- 3D Brussels Airport Model
- Brussels Airport customized vehicles, aircraft, equipment
- Voice recording and exercise play-back
- Occurrence reconstruction module



ROSENBAUER FIRE TRUCK



ICAO Designator: FIRE3
Manufacturer: Rosenbauer

Kuwait Airport Operations
Model ID: FIRE3_KUW

Yellow
Model ID: FIRE3_YEL

Generic Livery
Model ID: FIRE3_GA

Airside Driver Training Simulator

- Scenario's:

- Radio-check and Failure Procedures
- Driver Lost Procedures
- Vehicle Breakdown Procedures
- Inclement Weather & Time-of-Day
- Low Visibility Operations (LVO)
- ILS Sensitive Areas



Airside Driver Training Simulator

- Scenario's:

- Heavy Traffic
- Runway Crossings
- Tug Driving - Aircraft Push-back and Towing
- Procedures for Emergency Incidents



Airside Driver Training Simulator



Mobile Driver Training Simulator



Remarks

Cons :

- Unions
- ANSP
- Misunderstandings and mistakes when initiating

• Benefits :

- Improve communications and situational awareness
- Less frequency occupation
- Less fuel consumption due to simulator training
- More effective training hours available
- Less risk in causing real safety incident
- Less runway safety events (including incursions)

• Beneficial for safety!