

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

EAPPRI Ed. 3.0 Runway Safety Seminar

*Lisbon, 18 October 2018*

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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

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AERODROME GROUND MOVEMENT CHART - ICAO

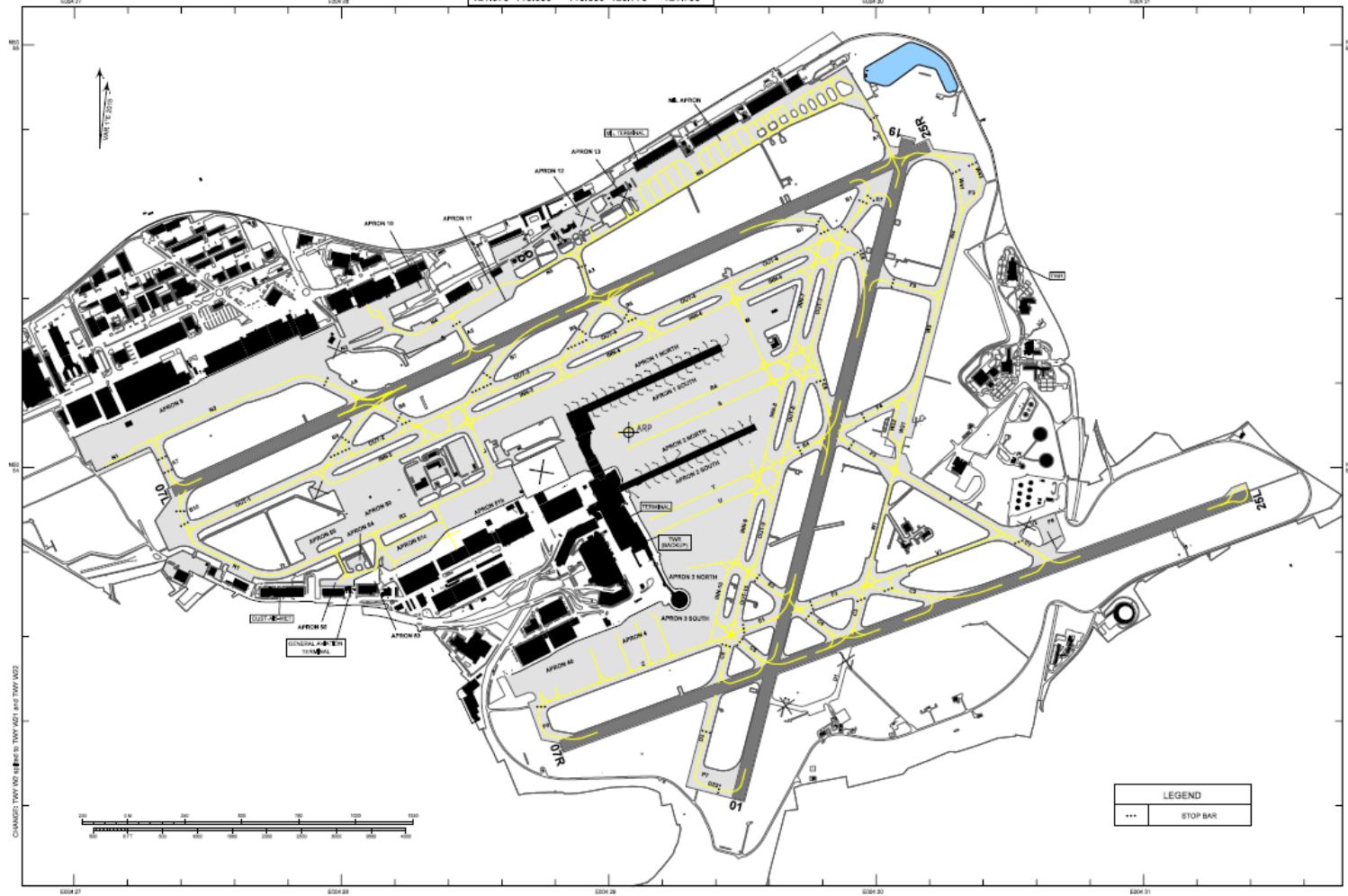
GND TWR ATIS DE

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BRUSSELS / Brusse[s]-National (EBBR)



# 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

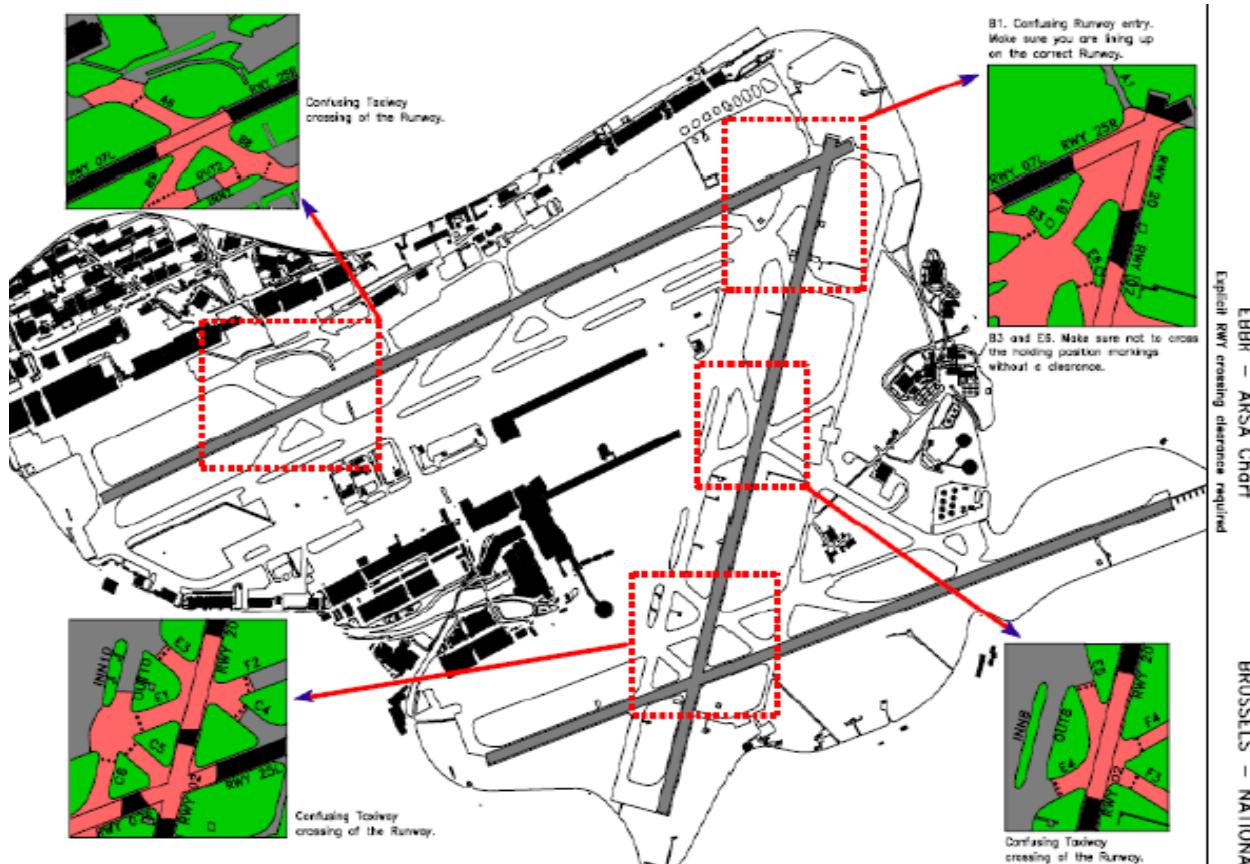
# Local Runway Safety Team (LRST)

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

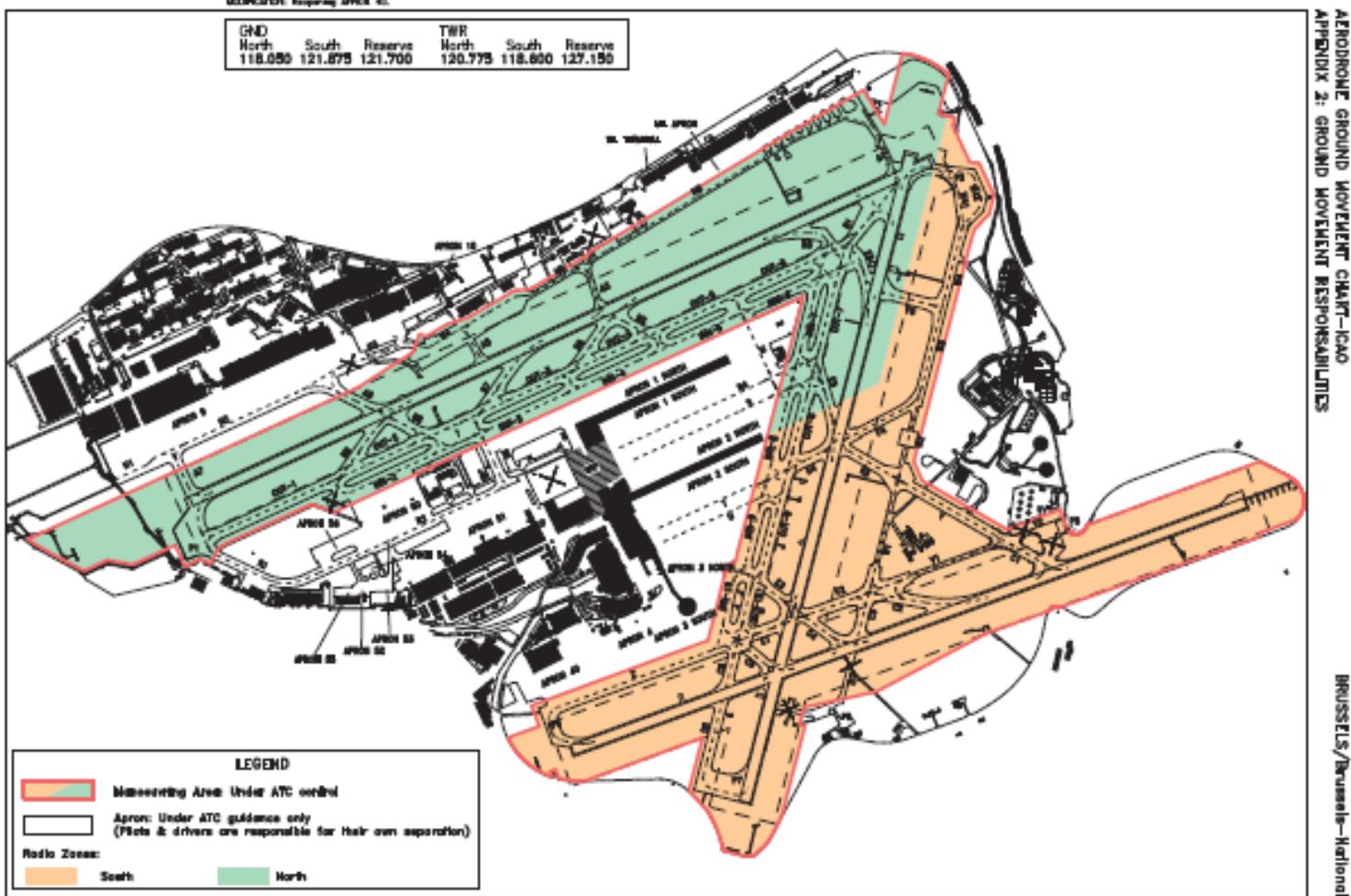
## H24 Stopbar use

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, Navaids 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



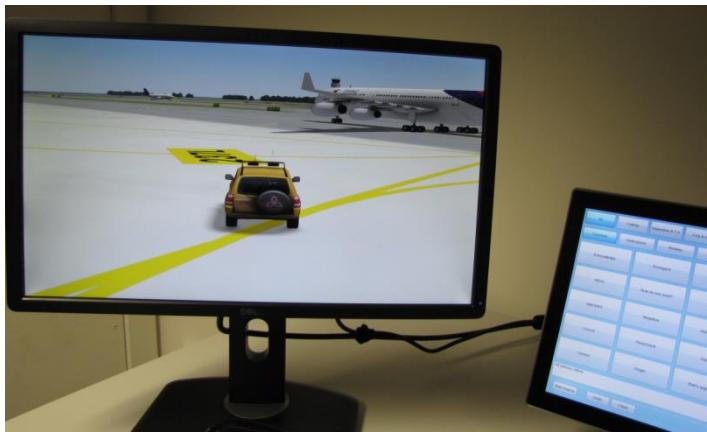
# Airside Driver Training Simulator

## - 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!**