

The remote explosive scent tracing (REST) for air cargo security

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2015, March 23-26
9th International Working Dog Conference



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Summary

- The Service technique de l'Aviation civile and explosive detection dogs
- Principle of Remote Explosive Scent Tracing (REST) for cargo
- STAC involvement in the REST innovation
- Joined testing French DGAC–TSA Nov.–Dec. 2013
- Certification process of REST by STAC



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The Service technique de l'aviation civile and explosive detection dogs




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The Service technique de l'aviation civile and explosive detection dogs

- All Security equipment to be used in French Airports have to be certified by STAC.
- This includes EDD teams (free running and REST)
- **EDD certification, every year:**
 - AT Biscarrosse test Centre (inside a base of French Ministry of Defense) for free running or REST EDDs
 - At CDG airport (Air France Cargo facility) for REST dogs




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Principle of the REMOTE EXPLOSIVE SCENT TRACING (REST)



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Principle of REST

- 1) The air inside the truck is pumped and particles are filtered (typically 8 min)
 
- 2) In a dedicated room, 2 dogs have to be used to analyze 6 filters in a line
 
- 3) Once the cargo is cleared by the 2 dogs, it is declared secure
 



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Direct

REST detection

- Operational procedure
 - Verification that the cargo is concealed for at least two hours
 - The air inside the truck is pumped and particles are filtered (typically 6 to 8 min)
 - In a dedicated room, 2 dogs have to be used to analyze 6 filters in a line
 - Once the cargo is cleared by the 2 dogs, it is declared secure.



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Operational interest REST

- Security is performed on pallets or trucks (no break down)
- Quick response once sample is taken
- Mobility of the pumping systems
- The security can be integrated in the industrial transport process and border regulation
- Multiple trucks or cargo pieces can be screened simultaneously



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- More than 25 000 trucks screened every year at CDG
- 20 to 40 minutes to screen a full truck (~ 25 t)




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Accès interdit
NO ENTRY

View of pumping systems during a detection test




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STAC involvement in the REST innovation




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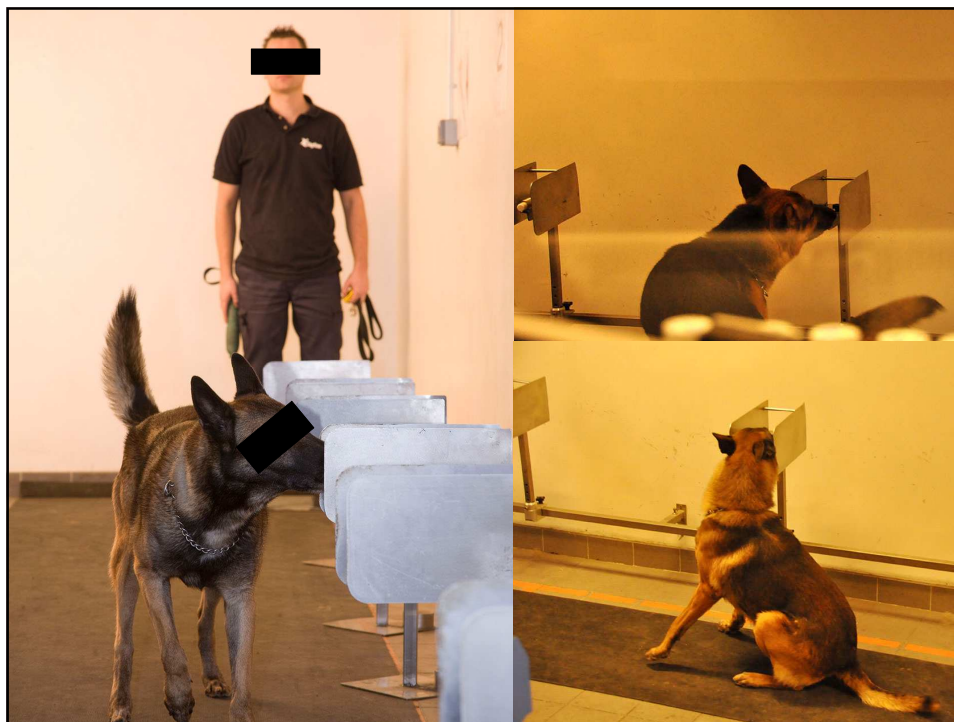
STAC involvement in the REST innovation

- First test of 4 dogs at STAC Test centre: Nov. 2003, on pallets of 3m³ max.
 - ☞ STAC requires not to use leach
 - ☞ STAC requires a two dogs procedure
 - ☞ DGAC decision to authorize an operational trial
- Second test at Biscarrosse on June 2004 on trucks of 101 m³ max.
 - ☞ DGAC decision to authorize an operational trial




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STAC involvement in the REST innovation

- From 2004 to 2007:
 - ☞ Operational trials (on pallets and trucks) followed carefully by STAC with the assistance of the local Air Transport Gendarmerie (GTA)
 - ☞ Several test campaigns organized at the STAC Biscarrosse laboratory
 - ☞ Development of a REST EDD certification process by STAC



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STAC involvement in the REST innovation

- December 2006: official DGAC authorization of the REST technique on pallets up to 3m³
- August 2007: official DGAC authorization of the REST technique on trucks up to 101 m³
- End 2010: official DGAC authorization of the REST technique on trucks up to 107 m³
- 2010: UE regulation on aviation security establishes EDD standards and recognizes the REST technique



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STAC involvement in the REST innovation

- Development of appropriate pumping systems and pumping procedures
 - Aspiration time = f (temperature, volume, ...)
- Development of specific operational procedures
 - Eg: verify the cargo is confined for at least 2 hours
- Development of a two dogs procedure
 - Aim: detection performance
 - Principle: need of two "clear" responses of two dogs to clear the cargo under inspection



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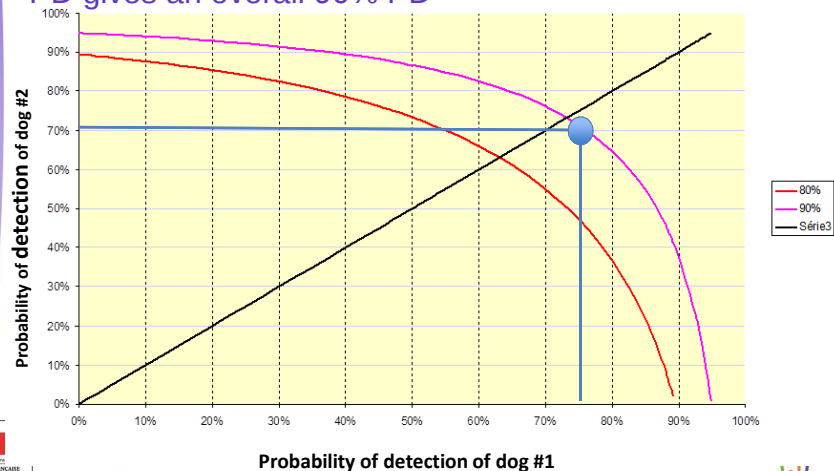
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Efficiency of detection with a two dogs procedure

Example: a combination of a dog with 75% PD and 70% PD gives an overall 90% PD



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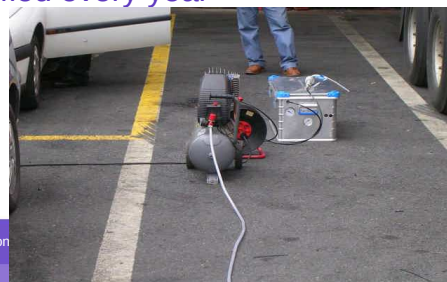
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Other Technical aspects

- The analyze room must contains appropriate equipment : Humidity and temperature control ; Cleaning tools ; Test samples.
- The equipment (pump ; filters) must be agreed by the Appropriate authority for aviation security
- Staff in charge of sampling must be trained to the technique and approved by the Appropriate authority for aviation security
- Each EDD has to be certified every year



Direction





Joined testing French DGAC– TSA (USA) Nov.–Dec. 2013






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Joined testing French DGAC – TSA on REST in Nov. – Dec. 2013

- Aim : provide evidence of the efficiency of REST in view of TSA recognition of the security measures based on this technique for cargo flying to USA
- A common test was organized by our two organizations in operational conditions at CDG airport
- Four weeks of test from Nov., 12 to Dec., 4 2013






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Joined testing French DGAC – TSA on REST in Nov. – Dec. 2013

- Test on site
- With real cargo trucks
- With real explosives
- During commercial operations
- Operational procedures applied: result was given once the complete procedure with two dogs was performed and the security decision given
- Logistics :
 - More than 800 samples collected and analyzed
 - Four weeks of testing
 - 7 persons (TSA + DGAC)

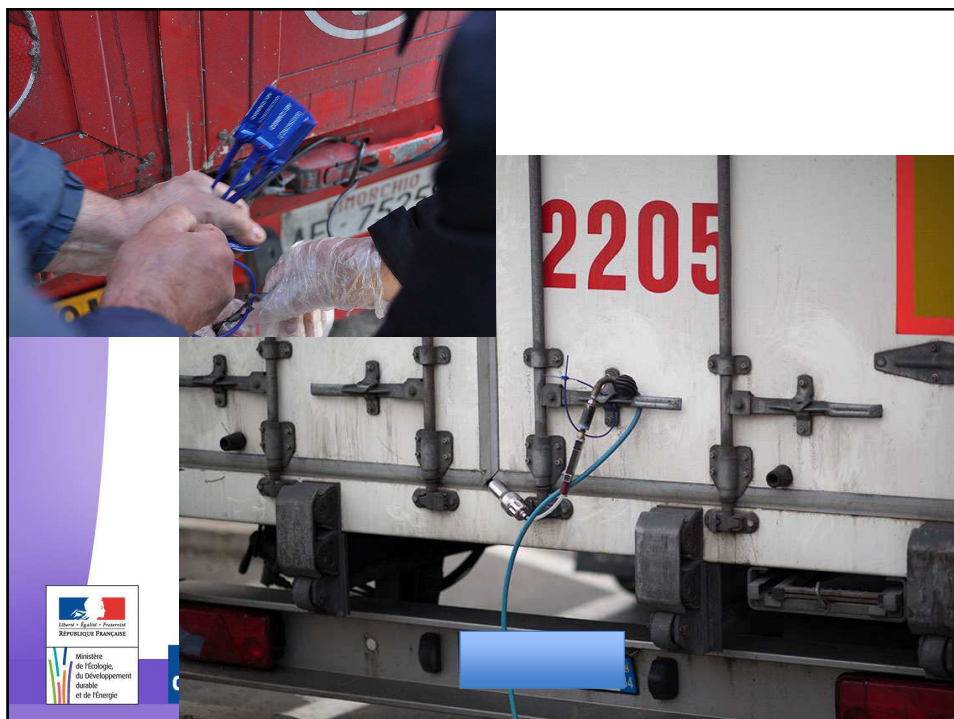


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Joined testing French DGAC – TSA on REST in Nov. – Dec. 2013

MAIN RESULTS:

- Detection rate measured is high
- False alarms rate is low
- The procedure using two dogs is efficient

OUTCOME:

- ✎ TSA recognition of the French REST method
(letter of January, 20 2014 signed by the TSA
Administrator to DGAC)



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REST detection in France



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REST detection in France

- Currently 2 companies are approved by DGAC
- For a total 24 “Rest” EDD certified
- 3 sites equipped:
 - Paris Charles-de-Gaulle (2 companies)
 - Lyon
 - Vatry



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THANKS FOR YOUR ATTENTION

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