

UK Department for Transport Science and Technology

Cargo Screening Programme

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Team

Known Consignors

- Come in all shapes and sizes

Can be:

- Manufacturer
- Distributor
- Must originate the cargo
- Must control access to it once it is identifiable as air cargo
- Must Train and background check staff who have access to the cargo once it is identifiable as air cargo



Regulated agent



- Screens cargo
- The only entity to declare cargo as secure
- Maintains security of cargo
- Completes a cargo security Declaration (CSD)

Approved Methods of screening

Method of screening must be appropriate

- The "*means or method most likely to detect prohibited articles*" must be used when screening the cargo.
- The "*means or method employed shall be of a standard sufficient to reasonably ensure that no prohibited articles are concealed in the consignment*".

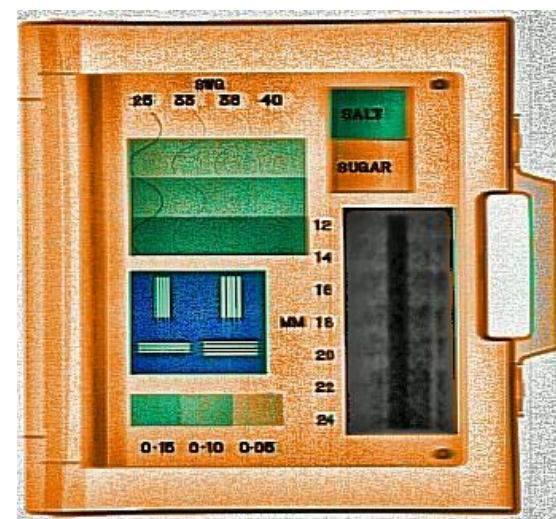
EU Cargo Screening options

- Dual View X-ray
- Explosive Detection Systems (EDS)
- Hand Search and Visual Inspection
- Metal Detection Equipment (MDE)
- Explosive Trace Detection (ETD)
- Remote Explosive Scent Tracing (REST)
- Free Running Explosive Detection Dogs (FREDD)



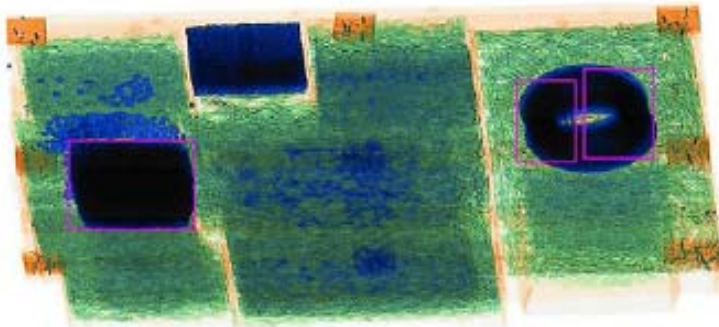
Dual view X ray

- No automated detection in use
- EU image quality test piece daily check is the only acceptance method
- No type testing of Standard X-ray equipment
- UK has required all new installations of cargo X-ray to be dual view since Sept 2011
- All cargo X-ray in the UK will be dual view by 1st Jan 2015
- Non-compliance screening mostly due to dense items

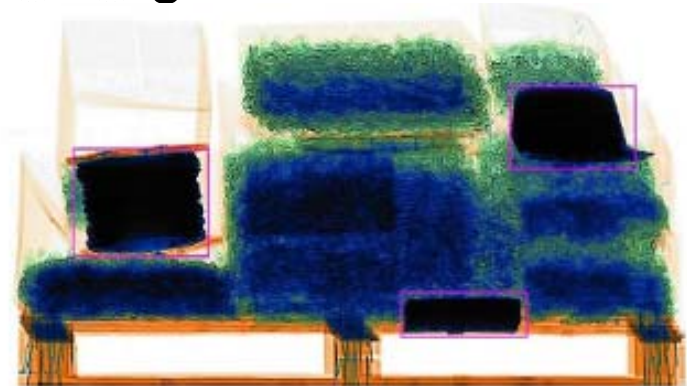


DARC Alarm

- Dense Area Recognition Capability
- Indicates large areas of cargo that do not contain enough information to make a screening decision
- Software is present on most vendors machines but thresholds have not been mandated by regulators
- Process to calibrate thresholds across machine types
- To include an Audit Trail to record how cargo was cleared

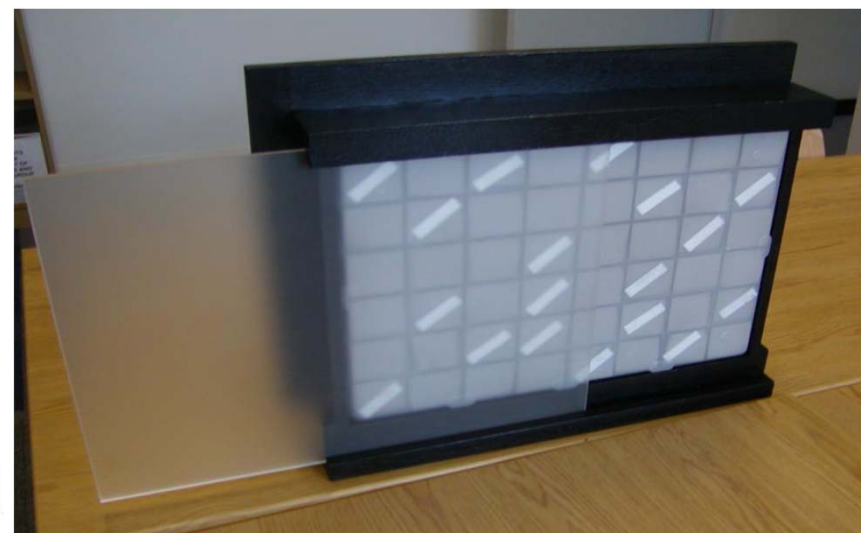
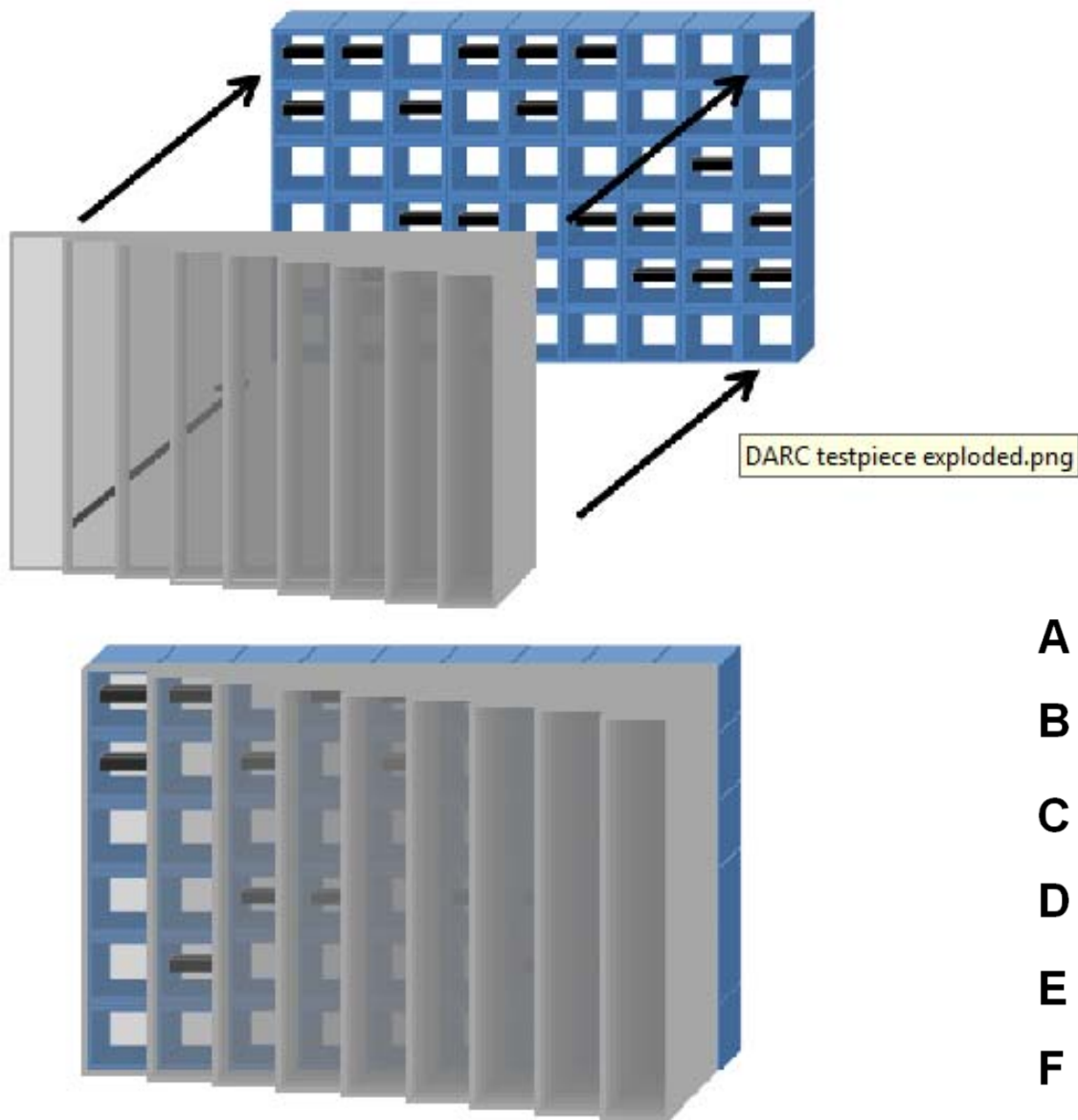


TOP VIEW



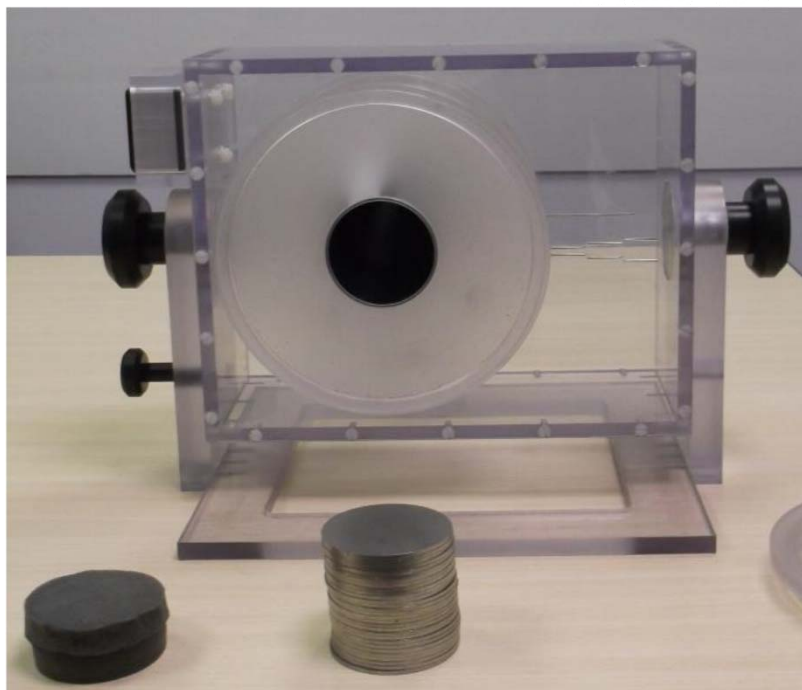
SIDE VIEW

DARC Alarm grey scale test piece



	1	2	3	4	5	6	7	8	9
A									
B									
C									
D									
E									
F									

DARC Alarm area test piece



To determine if the area setting of the non penetration alarm is set correctly



- More than 70 EDS configurations tested from 6 manufacturers under the ECAC common evaluation process
- 44 EDS configurations are listed on the ECAC website
 - 36 – Standard 3
 - 8 – Standard 2
- Standard 1 for EDS expired on 1 Sept 2012
- Standard 2 for EDS expires on 1 Sept 2018 in the UK



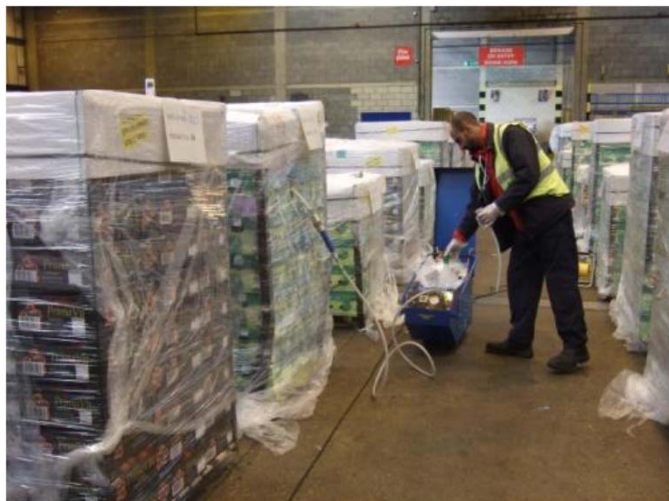
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ETD approvals



- EU Regulation requires swabbing of the outside, inside and contents of the consignment.
- Too slow for the majority of consignments so used for resolution of difficult to screen cargo
- From June 2014 to date (October 2014):
 - Endorsement of the Common Testing Methodology (CTM) for ETD on 18 April 2014
 - 4 ETD systems tested and 14 tests are currently ongoing
 - 2 ETD configurations listed on the ECAC website
 - Only 1 approved configuration for cargo

Remote Explosive Scent Tracing REST



- Cargo Consignment wrapped in plastic
- Vapour left to soak for a minimum of 2 hours
- Vapour is pumped through a filter
- Filter is presented to a dog for screening



Cargo Screening Using Canines - REST

- Following operational compliance trials jointly conducted with DHS in 2014, all the accreditations for operational REST dogs were revoked
- UK currently has no private REST dogs that meet our requirements, but we are open to work with any companies who apply
- Operational REST operations are still ongoing in other European member states following successful trials
- Dog providers *methods* in UK are not regulated
 - Dogs are required to meet the accreditation test and ongoing QA requirement
 - Can only provide guidance on the methods for training

Free-Running Explosive Detection Dogs (FREDD)

- Provide a mobile targeted area search capability
- Directly search cargo consignments
- Dogs indicate exact position of threat item

- Developing certification and deployment protocols for a UK capability based on robust scientific trial data

- Steering European common standards
 - European Civil Aviation Conference (ECAC)



Cargo Screening Using Canines - FREDD

- Currently finalising accreditation and quality assurance procedures
 - Operational deployment expected early 2015
- Benefits
 - Real time screening
 - Portable system
 - Less infrastructure and staff than REST
 - Quick to imprint dogs on new odours
 - Less intrusive than hand search
 - Properly trained and maintained dogs have demonstrated a high detection and low false alarm rate during UK trials in 2012 - 2014
- Challenges
 - Screening odour which has permeated out of cargo
 - Screening items bigger than 1 x 1 x 1.3m is time consuming
 - Dogs working in the “cargo” environment
 - Quality assurance testing is difficult and can't be blind due to numbers

UK method will require air holes to be apparent or drilled to allow permeation of vapour

Cargo Metal Detection Equipment

- EU Standard for Cargo Metal Detection CMD
- Testing currently conducted to a national methodology
- ECAC test method in draft
- There are currently no operational deployments in the UK
- Aspiration to make more use of CMD for niche applications or first level filtering of all cargo



Electronics detection

- Most currently approved techniques concentrate on detection of the main explosive charge material
- Ongoing UK project to determine if additional capability can be added by focusing on the means of initiation
- Currently not accepted as an EU screening technique
- Investigating the use of:
 - Radar techniques
 - Passive RF techniques
 - Non Linear Junction detection
 - Passive RF detection

As an addition to current screening or to aid facilitation of clearing suspect consignments