



**WORKING PAPER**

**HIGH-LEVEL CONFERENCE ON AVIATION SECURITY (HLCAS)**

**Montréal, 12 to 14 September 2012**

**Agenda Item 8: Driving technology developments and innovation**

**DATA COLLECTED FROM AUSTRALIA'S LIQUID, AEROSOL AND GEL  
TRANSIT SCREENING REGIME**

(Presented by Australia)

**SUMMARY**

This working paper presents the initial data collected from Australia's experience of implementing Liquids, Aerosols and Gels (LAGs) screening technologies at the transit screening points of Australia's international gateway airports.

**Action:** The High-level Conference on Aviation Security is invited to endorse the actions proposed in paragraph 2.

**1. INTRODUCTION**

1.1 As outlined in Information Paper 12, on 1 July 2012 Australia commenced the screening of transit duty free LAG items at the transit screening points Australia's international gateway airports (Adelaide, Brisbane, Cairns, Darwin, Gold Coast, Melbourne, Perth and Sydney). Following the commencement of transit LAGs screening, data collection to assess LAGs screening in an operational environment has been occurring. At the ICAO AVSEC Panel Meeting of March 2012, Australia was invited to provide a presentation of initial results to the ICAO HLCAS. The presentation at Appendix A provides these initial results and includes information on alarm rates and facilitation.

**2. CONCLUSION**

2.1 The High-level Conference on Aviation Security is invited to:

- a) take note of the information contained in the paper; and
- b) urge ICAO Member States to consider implementing a technological solution for LAGs screening and to work together to achieve a harmonised approach globally.

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## LAGs Screening: Data Collection

Australian International Transit / Transfer Screening Points.

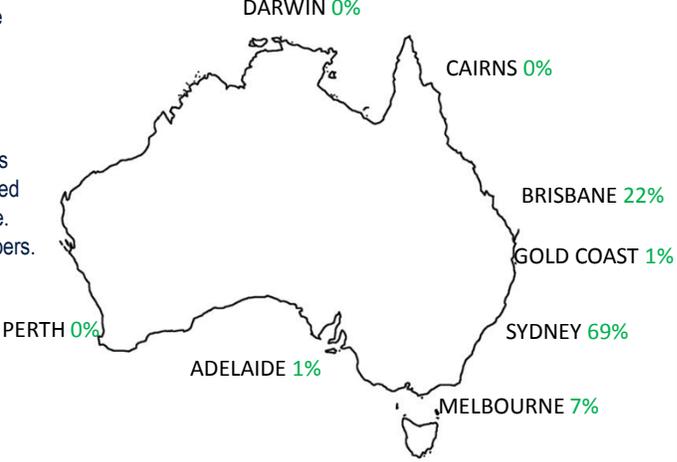
### September 2012



## LAGs Screening at 8 International Gateway Airports

Screening oversize duty-free LAGs in a sealed bag accompanied by a receipt at transit/transfer points.

Vast majority of eligible LAGs pass through Sydney, followed by Brisbane, then Melbourne. Others have negligible numbers.



City	Percentage
DARWIN	0%
CAIRNS	0%
BRISBANE	22%
GOLD COAST	1%
PERTH	0%
ADELAIDE	1%
MELBOURNE	7%
SYDNEY	69%

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## LAGs Screening Equipment in Use

Four pieces of equipment were installed for Phase 1 duty-free LAGS screening:

- 6040 aTiX X-ray
- ACX 6.4 MV X-ray
- EMA-3 BLS
- Identifier BLS



L3 Communications ACX 6.4 MV



Ceia EMA-3



Smiths Detection 6040aTiX

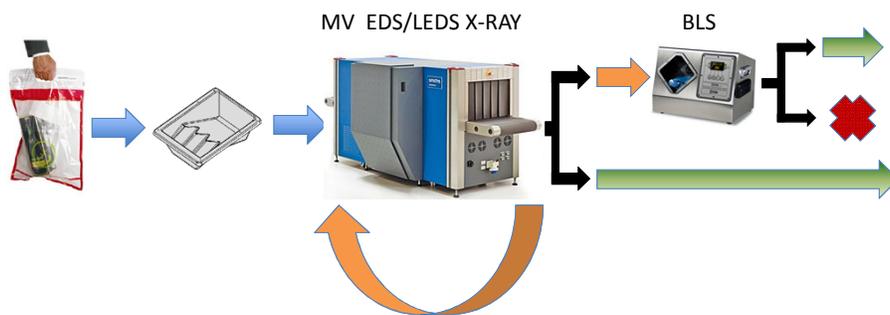


Kromek Identifier



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## Duty-Free LAGs Screening Process



LAGs can be re-run individually through the X-ray if there is an alarm when multiple LAGs are in the tray



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## Duty-Free LAGs Data

Data collection will take place over an 8 week period

- between 11 July and 4 September

Collecting information on:

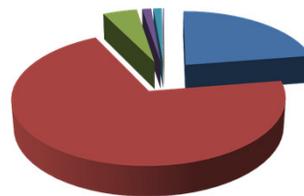
- Number and details of eligible duty-free LAGs
- No. of trays presented for screening
- Information on the MV X-ray and BLS screening processes
- Facilitation and passenger satisfaction



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## Early data:

- Screening results of 1460 records have been analysed so far. Results are representative of the processes to date however improvements are expected to continue as screeners and pax become more familiar with this type of screening
- Numbers do not reflect the total number of duty-free LAGs items presented – at busy times it may not be possible to capture all pax with duty-free LAGs
- Number of duty-free LAGs presented is **low**. Majority have come through Sydney



- Brisbane
- Sydney
- Melbourne
- Gold Coast
- Adelaide
- Cairns
- Darwin
- Perth

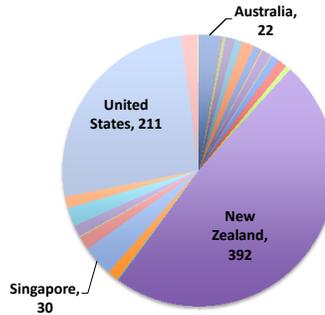


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## Passenger & tray information:

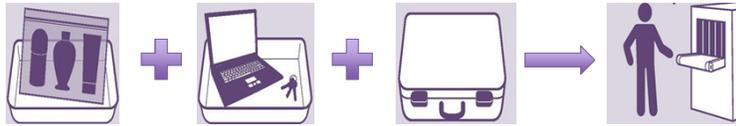
### Origin of LAGs:

- Items originating from 27 countries
- Majority of items ≈ 75% from the US & NZ



### Passenger Carriage Levels:

- Average of 3.4 items per pax
- Average of 1.8 eligible duty-free LAGs per pax
- Average of 1.2 LAG trays per pax



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## Product Carriage Levels:

Based on records for 1460 eligible duty-free LAG products

Category	QTY	%
Alcohol	1119	77 %
Perfume / cologne	45	3 %
Toiletries and make-up	146	10 %
Food	139	9 %
Unknown	11	1 %

Container Material	QTY	%
Glass	1176	81 %
Plastic	240	16 %
Metal	10	1 %
Unknown	34	2 %

Volume	QTY	%
>1000 ml	70	5 %
301 – 1000 ml	1066	73 %
101 – 300 ml	270	18 %
Unknown	54	4 %

Transparency	QTY	%
Transparent	575	39 %
Translucent	530	36 %
Opaque	285	20 %
Unknown	70	5 %



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## Clearance Rates:

### X-ray 1<sup>st</sup> pass:

- 1017 (*≈ 70%*) of total LAG items cleared on 1<sup>st</sup> pass

### X-ray 2<sup>nd</sup> pass:

Items that alarmed initially could be re-screened through the X-ray on their own if they were screened with multiple items on the first pass.

- A further 219 (*15%*) of total LAG items cleared on the 2<sup>nd</sup> pass
- Overall 1236 (*≈ 85%*) of total LAG items could be cleared using the X-ray with this process

### Bottled Liquid Scanner

- A further 130 (*8.9%*) LAG items were cleared by the BLS

X-ray Cleared After 1 <sup>st</sup> Pass by Category			X-ray Cleared After 2 <sup>nd</sup> Pass by Category			X-ray Cleared After BLS by Category		
Alcohol	75.9%	(849)	Alcohol	90.2%	(1009)	Alcohol	99.0%	(1104)
Food	17.3%	(24)	Food	31.7%	(44)	Food	94.9%	(65)
Make Up	25.0%	(5)	Make Up	80.0%	(16)	Make Up	99.1%	(18)
Perfume/Cologne	68.9%	(31)	Perfume/Cologne	86.7%	(39)	Perfume/Cologne	99.1%	(44)
Toiletries	77.8%	(98)	Toiletries	93.7%	(118)	Toiletries	99.1%	(124)
Unknown	90.9%	(10)	Unknown	90.9%	(10)	Unknown	100.0%	(11)
<b>Total</b>	<b>69.7%</b>	<b>(1017)</b>	<b>Total</b>	<b>84.7%</b>	<b>(1236)</b>	<b>Total</b>	<b>93.6%</b>	<b>(1336)</b>



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## Clearance Rates (cont):

### Overall

- 1336 (93.6%) of all LAG items were cleared
- 94 (6.4%) of all LAG items were surrendered
  - Majority of these LAG items (*≈ 5%*) were food products
  - Less than a 2% combined surrender rate for alcohol, toiletries, fragrances, make up



Common problem items include:

- Honey and jam
- Cream based liqueurs

Category	QTY Surrendered	% of Total LAG Items Surrendered
Alcohol	(15)	1.0%
Food	(74)	5.1%
Make Up	(2)	0.1%
Perfume/Cologne	(1)	0.1%
Toiletries	(2)	0.1%
Unknown	(0)	0.0%
<b>Total</b>	<b>(94)</b>	<b>6.4%</b>



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## Throughput:

### Throughput:

- Both liquid and bulk explosive detection introduced – not all impact due to LAGs
- Throughput changes due to equipment *and* process *and* human factors
  - e.g. item to be removed from STEB to go to BLS, and sealed in a new STEB if cleared
  - Manufacturers working to improve screening speed
  - Spacing and utilisation of trays, belt mode of operation
  - Screening officer familiarity with process and equipment
- Impact on throughput varied greatly between airports
- Already seeing improvements as processes become more familiar
  - Initial decrease of between approx 20% - 50% from pre 1 July
  - After 6 weeks decrease is approx 10% - 25% from pre 1 July



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## Passenger Experience:

### Passenger experience:

- Greater than 90% of passengers were satisfied or neutral about the process
- Unsurprisingly, people were generally happy unless they needed to surrender items
- Communication important in managing expectations



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## Conclusions:

- Number of eligible duty-free LAGs presented for screening so far is low
- Overall alarm (surrender) rate is less than 7%
- Problem items are jam and honey and thick, creamy liquids such as cream liqueur
- Throughput down, but improving as screeners gain experience with new processes
- Fall in throughput due to equipment *and* process *and* human factors for LAGs screening, as well as introduction of bulk explosive detection
- Important to consider all related factors:
  - Training
  - Processes
  - Equipment selection
  - Screening point layout



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