Systematic Threat Assessment
How to Adapt Security Measures Based on the Research on Latest Threats

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CASRA
Center for Adaptive Security Research and Applications

- Founded in 2008
- Emerged from the Visual Cognition Research Group (VICOREG) at the University of Zurich (founded 1999)
- About 30 employees (mainly psychologists, computer scientists and engineers)
- Main aim: Increase security and facilitation at airports and other environments involving people and technology.
- CASRA members are from the following organizations:
Project ICU
Intelligence, Competence and Unpredictability

Goal
Increase threat detection performance by combining intelligence with competence of security officers and unpredictable changes of screening level

Funding
Swiss Federal Office of Civil Aviation (FOCA)

Scope
All Swiss airports and security screening providers

Collaborations
Swiss airports, police authorities, federal competence centers and screening providers

Duration
01.01.2013 – 31.12.2015
Challenge: Training Content

Which threat objects should be trained?
Online News
Information about 3D-printed guns

Working gun made with 3D printer

By Rebecca Morelle
Science reporter, BBC World Service, Texas

BBC online: May 06, 2013
Open Online Forum

3D-files of gun parts available

380 Barrel (Threaded).stl
380 Barrel (Unthreaded).stl
Bottom Cover.stl
Firing Pin Bushing.stl
Frame Pins (x3).stl
-Frame.stl
Grip Pin.stl
Grip.stl
Hammer Body.stl
Hammer Pin.stl
Hammer.stl
Spring (x2).stl
Spring Connecting Rod Bushing.stl
Spring Connecting Rod.stl
Trigger Spring.stl
Trigger.stl

Defcad Forum: May 2013
Deep Web (aka Darknet)

Printed guns available

Deep Web research, April 22, 2014
Consequence
Implementation of new objects in X-ray training software?
Social Media

Manuals of Radio-Controlled IEDs (RCIEDs)

Facebook, February 02, 2014
Video Sharing
Manuals are distributed on video sharing websites

Youtube
File Sharing

Manuals are distributed on file sharing platforms

Dropbox
Consequence
Implementation of new objects in X-ray training software?
Online News

Information about IEDs in electronic devices

Afghan news site, December 2013
Closed Online Forum

Resurgence of discussion about how to hide explosives

Jihadist forum, May 2014
Consequence
Implementation of new objects in X-ray training software?
Radical Propaganda
Manual for homemade detonators

C. Preparation of the decoration lamp

We will proceed to break the top of the lamp by heating it. Make sure the filament does not break. The filament is the part which when electricity passes through it, it glows and produces light.

1. Heat the head of the lamp until it becomes black.
2. Place the lamp immediately in water while still hot.
3. Strike the tip of the lamp and it would break.

Inspire magazine, Summer 2010
Consequence
Implementation of new objects in X-ray training software?

Standard detonators

Homemade detonators
Deep Web
How to hide knives

«Actually in the backpack you can hide some transformable things like knife-multitools. I did it few times just by binding it to the laptop battery with some wires. On the scanner it looks like some electronic mess with something rectangular in the center. Usually they [security personnel] don’t pay attention to this. [...]»
Consequence
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Systematic Threat Assessment

Evaluation of source and information

THREAT SCENARIO

Feasibility  Impact  Mitigation

COUNTERMEASURES
Systematic Threat Assessment
Systematic Threat Assessment

Conclusions

› Keeping up to date

› New types of early stage threats can be found

› Large number of web alerts are constantly generated and have to be evaluated

› Resulting reports serve as support for decision makers

› Processes must be defined in order to ensure know-how transfer to security personnel
Thank you for your attention

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