



# ICCECIP 2023

*Hand tools of unlawful mechanical  
breaching and forcible entry*

***Ákos Bunyitai***

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# Objectives

- **Introduction**
- **Physical barriers**
- **Relevant standards and studies**
- **Typical breaching technics**
- **Breaching**
- **Comparison of opening sizes**
- **Adversary potential attack tools**
- **Conclusion**



# Introduction

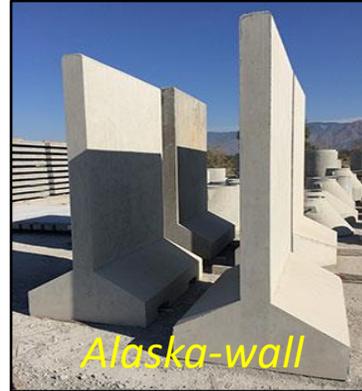
- The physical barriers are compulsory elements of the complex and effective security system.
- These barriers configured sufficiently strong and robust for provide time for the security personnel to
  - assess of intruder alarm signal,
  - delay the adversary to committing his malicious, unlawful act,
  - provide adequate time for response forces to react and neutralize.
- In order to shorten the delay time and breaching the physical barrier as quickly as possible, the adversary can use mechanical, ballistic, hydraulic, explosive or thermal tools and solutions.



# Physical barriers



High security fencing



Alaska-wall



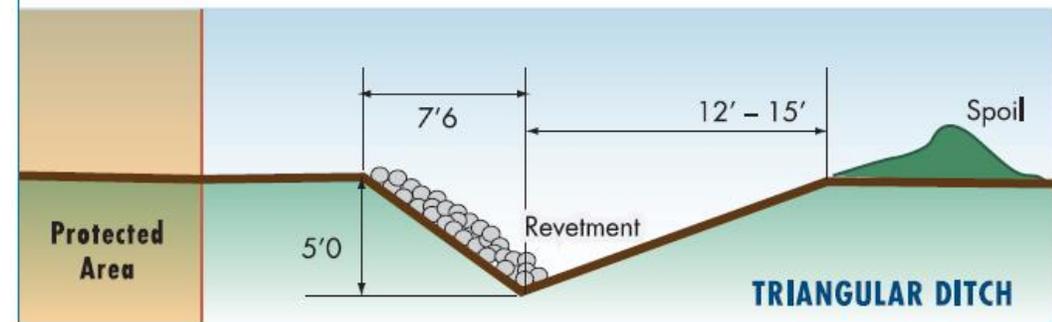
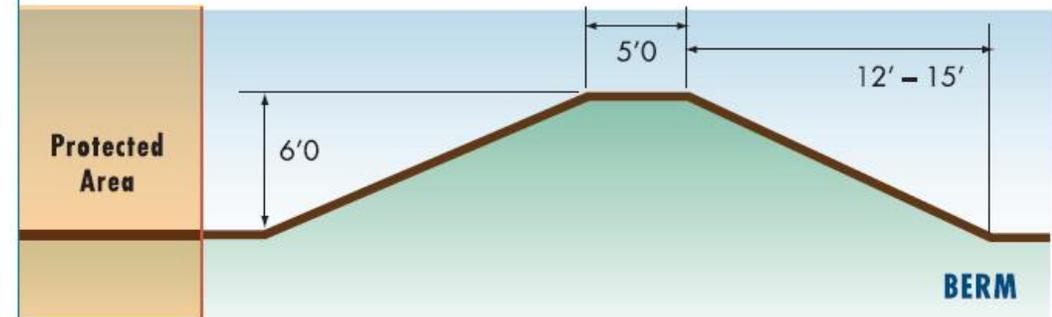
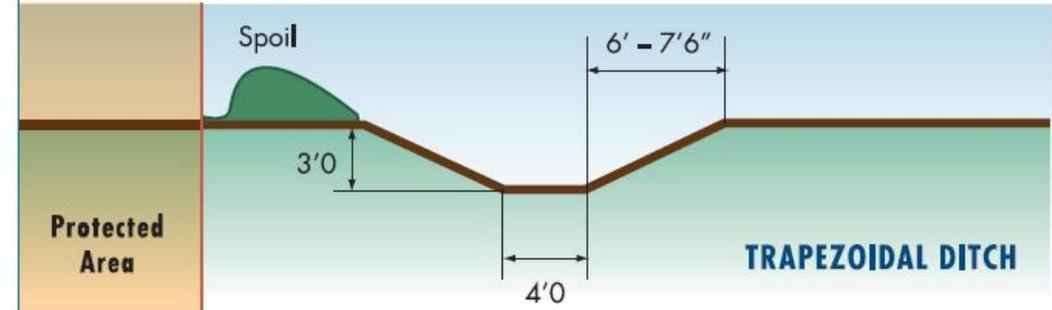
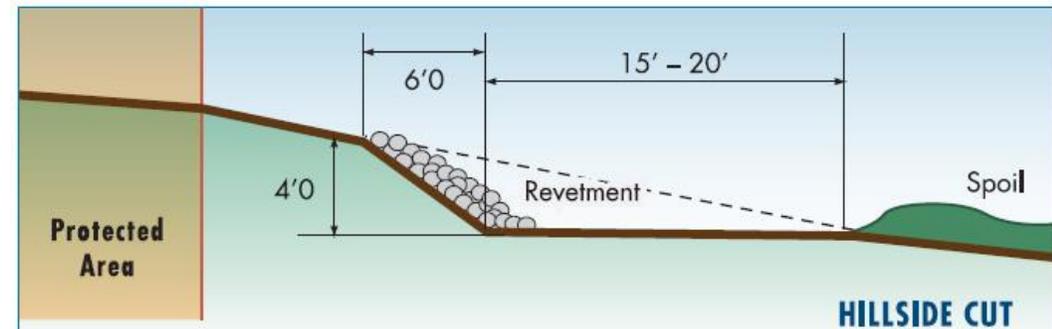
Texas (T)



Colorado



L-panel





# Relevant standards and studies

- MSZ EN 1627-1630:2021 standards
- U.K. Police Sbd (based on BS EN 1630:2011 standard)
- U.S Department of Commerce, National Bureau of Standards (NBS) Barrier Penetration Tests (Technical Note 837), 1974
- U.S Sandia National Laboratories, Technical Guidelines, SAND2011-3729P, 2011
- BRE Global Limited, Loss Prevention Certification Board (LPCB), Requirements and testing procedures for the LPCB certification and listing of intruder resistant building components, strongpoints, security enclosures and free-standing barriers (Loss Prevention Standard LPS 1175: Issue 8.1), 2020



# Typical breaching technics

Direction	Method	Goal	Equipment			
From the bottom	sneak under	Passage Damage Sabotage	-		tools	
From above	climb over		-		tools	
Frontal	pass over		-	tools	explosive	vehicle
Frontal	shot-through	spalling	firearm			



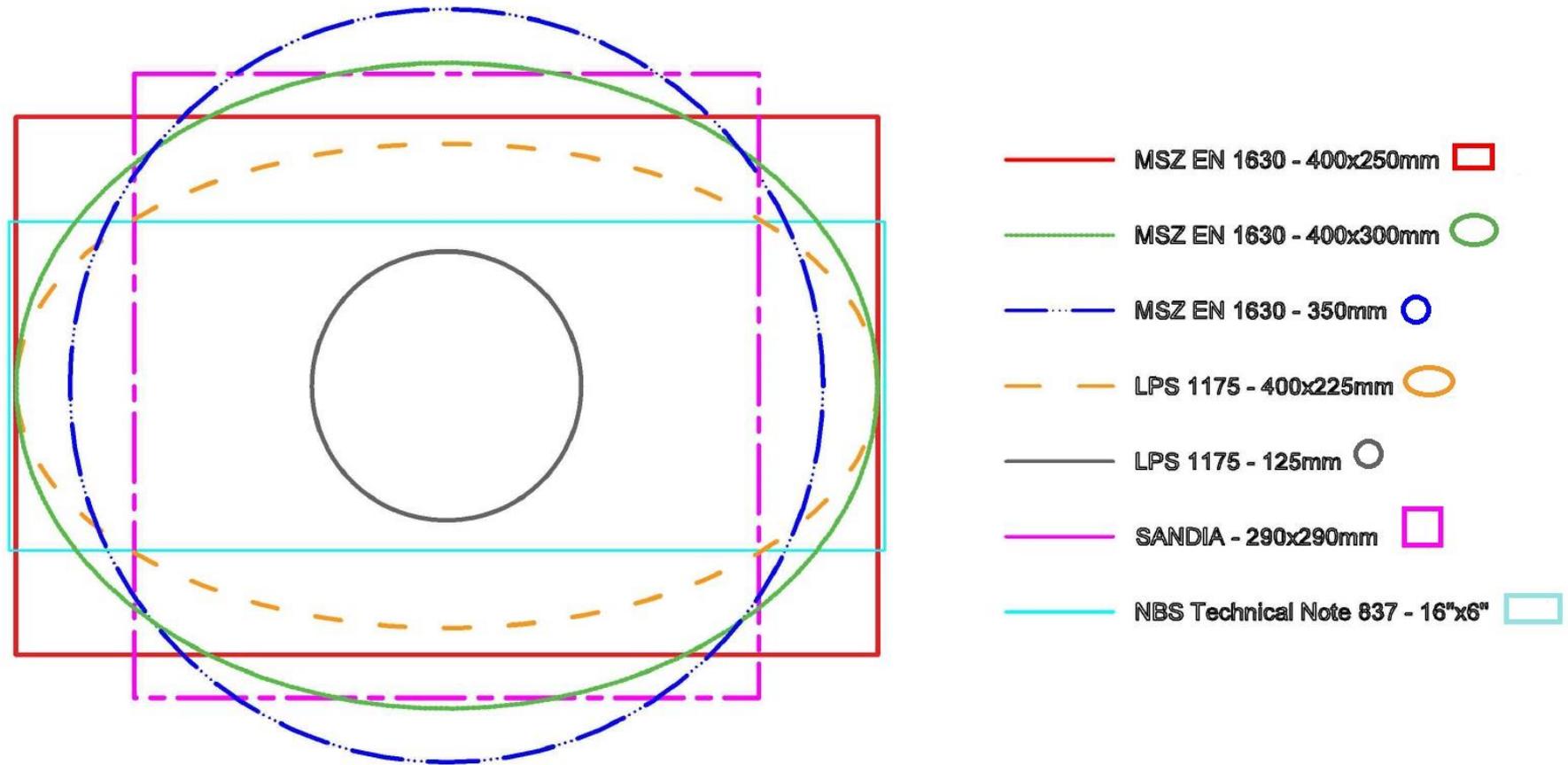
# Breach

By breaching a physical barrier, we mean the change that occurs at the moment in time when it loses its ability to delay the adversary from carry out his illegal act.

- In case of the last boundary element (enclosure, packaging, etc.) of the protected material, object or equipment: complete circular breach of 125mm diameter in the full cross-section, which capable for intentionally damage or sabotage;
- In all other cases (fence, wall, openings): complete 16"x6" rectangular or 400mmx225mm elliptical breach in the full cross-section, which is a man-passable sized opening.



# Comparison of opening sizes





# Adversary potential attack tools 1.

Analysing the different toolkits, the hand tools can be grouped typically as follows (incl. manual and powered tools):

<b><u>Temporary fasteners</u></b>	<b><u>Puncture</u></b>	<b><u>Lifting, stretch</u></b>
Screwdriver Combination wrench, Adjustable wrench, Hexagon socket set, Hexagon wrench, Etc.	Drill, Hammerdrill, Rotohammer, Auger, Etc.	Wedge, Hydraulic jack, Rabbit tool, Hooligan bar, Crowbar, Pry bar, Johnson bar, Etc.



# Adversary potential attack tools 1.

Analysing the different toolkits, the hand tools can be grouped typically as follows (incl. manual and powered tools):

## Temporary fasteners



## Puncture



## Lifting, stretch





# Adversary potential attack tools 2.

<u>Demolition</u>	<u>Cutting, holding</u>	<u>Lock opening</u>	<u>Other</u>
Hammer, Hatchet, Axe, Pick axe, Enforcer, Shovel, Etc.	Knife, Saw, Glass cutter, Metal plate shears, Angle grinder, Cutting torch, Plasma torch, Pliers, Chisel, Bolt cutter, Etc.	Universal key, „A“-tool, „K“-tool, Lock picking set, Bump key, Etc.	Ladder, Fleshlight, Cable, Cord, Tweezers, Etc.



# Adversary potential attack tools 2.

## Demolition



## Cutting, holding



## Other





# Conclusion

- The interpretation of breaching,
- the suitable sized opening,
- adversary potential attack tools

may vary, depending on the attack scenarios determined in the facility's Design Basis Threat.

- There research and standards o the subject show a lot of overlap.



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Thank you for the kind  
attention!

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