FORCIBLE ENTRY
(FORCIBLE EXIT)
FDNY
NEVER FORGET
SEPTEMBER 11, 2001
Purpose of Forcible Entry

- Firefighters must be able to get past security measures during fires, rescues, and sometimes even during odor investigations or alarm malfunctions.
- FORCIBLE ENTRY may be necessary to accomplish this task.
Forcible Entry

- The techniques used to gain access to a structure whose normal means of access is locked, blocked, or nonexistent
- These techniques, when properly used, do a minimal amount of damage to the structure or structural components and provide quick access for FF’s
Responsibility

- The fire can’t be extinguished, searches can’t be made, and extension of fire can’t be checked until entry is made.
- FF’s assigned the job of gaining entry is given that responsibility.
Proficiency

- The need for speed in gaining entry
  - Most fire and emergency operations start at the front door or main entrance
  - Before any tactical moves can be made, the entry door has to be opened
Proficiency

Reduce damage resulting in improper techniques

Most people given tools can gain entry

- A door can be “battered” down with an axe

  However, until we take into account what is behind the door, we want to ensure the door’s integrity

  With proper training, most FF’s will be able to open a door with minimal damage
Proficiency

- Professionalism
  - This is the benchmark of a good FF
  - Pride in our work will reflect pride in the department
  - By reducing the damage to a minimum, we ensure the safety of the people we serve
  - The doors we destroy could leave the occupants vulnerable to further loss
  - The people we are sworn to serve rely on our good judgment
FORCIBLE ENTRY TOOLS

- FF’s must know the characteristics, capabilities, and limitations of the tools available to perform forcible entry
- Selection of the proper tool may make the difference in whether any particular barrier is successfully overcome
Cutting Tools

- Axes – Pick and Flat
  - 6# and 8# heads
- Bolt Cutters
- Rebar Cutters
- Oxyacetylene Cutting Torches
- Oxygasoline Cutting Torches
- Plasma Cutters
Cutting Tools (cont.)

- Power Saws
  - Rotary
  - Chain
  - Circular
  - Reciprocating
Prying Tools

- Crow Bars
- Halligan Bars
- Pry (Pinch) Bars
- Claw Tools
- Kelly Tools
- Pry Axes
- Flat Bars (Wonder)
- Ram bars
Prying Tools (cont.)

- Hydraulic
  - Hydraulic Spreader
  - Hydraulic Ram
  - Hydraulic Door Opener
  - Rabbit Tool
Striking Tools

- Sledgehammer
- Flat head Axe
- Maul
- Battering Ram
Pushing / Pulling Tools

- Standard Pike Poles
- Rubbish Hook (L.A. Trash Hook)
Thru-The-Lock Tools

- K-Tool
- A-tool (Officers Tool)
- J-Tool
- Shove Knife
Padlock Tools

- Duck Billed Lock Breaker
- Bam Bam tool
- Hockey Puck Lock Breaker
- Locking Pliers (Vise Grips) with Chain
- Halligan Bar (Pick end)
Set of Irons

- Consists of a flat head axe and a halligan
  - Preferably an 8 pound axe and a 30” halligan
- Secured (married) together with a strap
- The mainstay of every engine and ladder company
STRATEGIC PRIORITIES FOR FORCIBLE ENTRY

- Try before you pry / Look for a Knox Box
- Entry points for fire attack crews
- Provide a suitable means of egress for fire personnel and civilians (FORCIBLE EXIT)
- Enter from the unburned side. Look for the easiest way in
- If possible, use the door the occupants normally use
- Maintain the integrity/control of the door
  - Can change fire behavior
- Make sure hose and vent team are ready before opening the door completely
Knox Box System
(Rapid Key Entry System)

- Only good if the owner or new owner maintains the correct keys inside the box
- FD has the only keys to open the box
Reason For Using Doors as Entrances

- Largest opening
- Easier, safer entry and exit
- Clearest path
- Most likely place to find victims
- Victims more easily controlled during evacuation
- On main wall, best place for orderly search
- Heat and toxic by-products are less because the entrance is at a lower level
Door Size-Up

- The primary obstacle FF’s face in gaining access into a building is a locked or blocked door.
- Size-up of the door is an essential part of the forcible entry task.
- Recognizing how the door functions, how it is constructed, and how it is locked are critical issues to successful forcible entry.
Door Size-Up

- Which way does the door swing? Does it swing out (towards you), or in (away from) you?

- How do you know? There are two ways: Hinge position and how the doorframe is set in the wall.

- Look or feel for the hinges. If you can see them or feel them on your side of the door, then the door opens towards you. If you can’t see or feel the hinges the door will open away from you.
Door Size-up

- Check how the door frame is set in relation to the wall. If it is flush with the wall, that is even with the plane of the wall, the door swings outward. If the door is recessed into the wall, usually by the depth of the doorframe, it will swing inward and away from you.
Identification of a Swinging Door

Outward Swinging

Inward Swinging
DOORJAMB CONSTRUCTION

- **Forcible Entry**

  - **Stopped Jamb**
    - Jamb
    - Stop
    - Door

  - **Rabbeted Jamb**
    - Door
    - Rabbeted Jamb
Door Size-Up

Once you have determined which way the door swings, you need to judge how difficult the door will be to force.

- Look at three things:
  - The strength of the door and its assembly
  - The lock mechanism
  - The doorframe and the wall that holds it.
Wooden Swinging Doors

Three general types:

Panel
- Solid wooden members inset with panels
- Panels may be held in place by molding that can be removed for quick access

Slab
- Solid core – exterior doors
- Hollow core – interior doors

Ledge (batten)
- Made of planks fastened to horizontal and diagonal ledge boards
Metal Swinging Doors

Three general types:
- Hollow metal
  - Hollow shells filled with fire-resistive material
- Metal clad
  - Solid wooden doors with a metal skin
- Tubular
  - Constructed of seamless rectangular tube sections
  - Glass or metal panels

Consider the use of power tools when forcing metal doors
Single Swinging Doors

- Residential and small office buildings usually open which way?
  - *Inward*
  - If you see hinges, the door opens toward you

- Exterior doors and interior exit doors in large commercial, public assembly, industrial, and other high-occupancy buildings usually open which way?
  - *Outward*
Double Swinging Doors

- Same principles as single swinging doors
- Look for the hinges
- Locking mechanism can be located in different locations
Double Swinging Doors
Multiple Locks
Aluminum Glass Doors – Tempered Glass (Usually)

- Through the lock technique
  - Use K-Tool to remove the mortise lock
  - Use J-Tool to manipulate the panic hardware
- Spread doors apart to gain access to the lock
  - Set of Irons
    - Cut lock with K-12
- Break glass
  - Strike at the bottom corner
  - Clean out frame
  - Remove push bar
Tempered Glass Doors

- Lack of a full frame
- Handle mounted through the glass
- Lock is mounted in either the top or bottom stile
Sliding Doors – Patio

- Slide left or right of a stationary glass panel in a metal track
- Made with one locking mechanism
- Force entry:
  - Pry the lock
  - Lift the sliding panel out of its track
  - Pull the lock cylinder
Sliding Doors

- Usually secured with a secondary locking mechanism
  - **Burglar Blocks**
    - Locking devices at the top and/or bottom of the doors
      - *Pins or broom handle*
  - Almost impossible to force without causing excessive damage
  - Will have to break the glass to enter
    - Last resort
Sliding Doors – Pocket

- Slides into a partition or wall when pushed open
- Usually suspended from an overhead track
- Must pry straight back from the lock
Security Doors

- **Construction**
  - Outside frame
  - Door (metal with mesh so people can’t reach in)
  - Heavy metal locking area

- **Considerations**
  - Usually opens out
  - Usually another type of door behind it
  - Locks can be single or double keyed
Security Doors

HINGES

DOOR FRAME

DEAD BOLT

SECURITY PLATE / LATCH PROTECTOR

MESH
Forcible Entry

Gaining entry with minimal damage to the door

Strike door with an axe breaking the tubular metal support and dislodging the tack weld.

Use the butt end of a tool to strike the screen and dislodge the tack weld. This will allow a hand to reach in and unlock the door.
Security Doors

- Pry lock mechanism away from jamb.
- Cut the lock out of the problem.
- Cut and/or remove the hinges - *Last Resort*
## PRYING THE LOCK

- Insert the adz (flat end) of the halligan between the gate frame and the metal jamb
- Then simultaneously forcing the tool in a downward motion and pulling out on the gate
Pie Cut

- Make first 45 degree cut down through the door frame into the door itself (start above the lock)
  - End level with lock
- Make second 45 degree cut by overlapping the first cut and continue through the door frame under the lock
- Open door
- Locking mechanism should stay attached to door frame

OVERLAP ALL CUTS
**Latch Protector – Security Plate**

- Thicker metal
- May take a little longer to cut
- Use striking tool to remove door knob (Why?)
- **Cut protector between door and frame to make sure you cut locks**
Hinge Cuts

Objective: Cut all 3 hinges starting at the bottom
Conventional Forcible Entry

- Use standard FD tools to force open doors and windows to gain access
- Usually a two man team, using a flat head axe and a Halligan
- Requires skill and technique to master
- Simple matter of technique and leverage
Prior to Forcing a Door

- **TRY THE DOOR** to determine “IS THE DOOR LOCKED?”
- Type of door and locking devices involved
- Prevailing conditions at the scene
  - Heat, smoke, and visibility
- Check for resistance
  - Push in at top, center, and bottom
  - May give you an idea as to where the locking devices are located
Steps For Forcing A Door

Most conventional forcible entry involves several moves in order to accomplish the task

- Three separate steps
  - **GAP – SET – FORCE**
- Each step may involve additional maneuvers, but once you understand the basic principles, it is easy to follow and move quickly through the steps
Forcing Inward Swinging Doors – *GAP the Door*

- Push up or down on the Halligan causing the **ADZ** to rotate and crease the door
Forcing Inward Swinging Doors – 
**SET the Tool**

Requires the most skill
- Involves working the **Fork** of the Halligan into the **GAP** to spread the door away from the frame
- The halligan is considered **SET** when the **Fork** is “locked in” to the inside of the doorframe
Forcing Inward Swinging Doors – 
*SET the Tool*
Forcing Inward Swinging Doors – SET the Tool

- When there are multiple locks closely spaced on the door (stacked locks), position the Halligan above the upper lock or below the lower lock.

- The 6 inch rule is a general rule, and should allow the FORK to clear the inside to the lock.
Forcing Inward Swinging Doors –

**SET the Tool**

- FF holding the Halligan should be between the door and the tool
  - This position gives a good view of the area where the tool is being driven
  - Keep your eye on the **FORK** where it is being driven into the **GAP**
  - Keep moving the Halligan away from the door as it is being driven in (struck)
Forcing Inward Swinging Doors – *SET the Tool*
Forcing Inward Swinging Doors –

Set the Tool

- When the Halligan is nearly perpendicular to the door, drive in forcefully.
- This will ensure that the tool is “locked” into position, and not slipping when pressure is applied.
- The tool is SET when the Arch of the FORK is even with the inside edge of the door/doorstop.
Forcing Inward Swinging Doors –
SET the Tool
Forcing Inward Swinging Doors – **FORCE**

When the Halligan is **SET, FORCE** is applied to the tool creating leverage against the door

- FF changes position to face the door
  - This gives a better position to apply pressure
- Push in sharply to create maximum force
- The other FF must try to control the sudden opening of the door by holding onto the doorknob
Forcing Inward Swinging Doors – FORCE
Forcing Inward Swinging Doors – Pike or Adz into the Frame

Drive the **PIKE** or **ADZ** into the doorframe
- Baseball swing
- Flat head axe
- Push down into the door
- Works best on wooden doors with wooden frames
Forcing Inward Swinging Doors – Pike or Adz into the Frame
( Baseball Swing )
Forcing Outward Swinging Doors – ADZ End

Gapping The Door (Top View)  Gapping The Door (Front View)

Set The Tool (Top View)  Force The Door (Top View)
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Forcing Outward Swinging Doors – FORK End

- Gap (Top View)
- Set (Top View)
- Force (Top View)
Hinges

- Forcing a door at the hinge side should not be a primary means of gaining entry.
- Once a door is forced in this manner you will lose the integrity of the door.
- The primary means of gaining entry should be on the lock side.
- Forcing a door at the hinge side should only be done when all other means of gaining entry on the lock side have failed.
Inward Opening Doors

- Create a **GAP** and use the **ADZ** end of the tool
- Place **ADZ** just above or below the hinge
  - Apply force either up or down with the **ADZ** end
- Work from the bottom up
Inward Opening Doors

**SET** and **FORCE** the Halligan in the same manner as forcing the locking mechanism on an inward swinging door
Outward Opening Door

- Place the **FORK** over the exposed hinge and pry up or down
- On stronger hinges, drive the Halligan over the hinge and twist side to side to break or loosen the mounting screws, then pull out
Outward Opening Door – Hinge Pin Removal

Remove the pin if possible to separate the hinge.
Outward Opening Door

- Cut the hinges with the rotary saw
  - Cut from bottom to top
Thru-the-Lock Entry

- Means of gaining entry by attacking the locking device and opening the door with little or no damage to the door or frame
- In most cases, this method would only be used when time and fire conditions are not urgent
Types of Locks – Key-In-The-Knob Locks

- The locking mechanism is part of the lock
  - Latch is usually no longer than ¾”
- Found in both residential and commercial
- Usually not the only lock on exterior door
  - One of the easiest to pry open
  - Used with deadbolts
Types of Locks – Tubular Deadbolt Locks

- Popular locking device
- Deadbolt is 1”+ in length

- Double cylinder deadbolt (Double keyed)
- Single cylinder deadbolt (Single keyed)
- One way inside deadbolt

Double cylinder deadbolt (Double keyed) | Single cylinder deadbolt (Single keyed) | One way inside deadbolt
Tubular Deadbolt Locks
Types of Locks – Mortise Locks

- Designed to fit into a cavity of a door
- Consists of a latch mechanism and an opening device
- Can be found on private residences, commercial buildings, and industrial buildings
Types of Locks – Rim Locks

One of the most common locks in use today
- Surface mounted – add on lock
- **Identified from the outside by a cylinder that is recessed into the door**
- Found in all types of occupancies
  - Houses, apartments, and some commercial buildings
Rim Locks

Deadbolt

Night Latch

Vertical Deadbolt
Cylinder

- The component of a locking mechanism that contains coded information for operating that lock, usually with a key
- Removed so the lock can be turned
- "A" and "K" tool can remove
- Key Tool turns lock
Cylinder Guard

A metal plate that covers a lock cylinder to prevent forceful removal
Latch Protector – Security Plate

- Prevents access to the latch so it can’t be pried or forced
- Fastened to the door or door frame
Figure 1

*Picture taken from IFSTA Essentials*
Through the Lock – A Tool (Officers Tool)
Through the Lock – Halligan Tool
Through the Lock – K Tool
Problems Encountered When Using the K-Tool

Cylinder Too Deep

Cylinder Too Wide
Key in Knob
Removing the Center of the Knob

Center of the knob on some locks (Kwikset) can be removed with a knife-like tool or slotted screwdriver.

- Bam-Bam Tool can also be used to pull the face of the lock to expose the stem slot inside the knob where the correct Key Tool can be inserted.
Through the Lock – Tubular Deadbolts

- The A-Tool is the preferred tool on most of these locks due to its ability to get a better bite behind the cylinder
- Place the tool at an angle to start
- Remove the cylinder
- Insert the Key Tool
- Rotate to open
  - May take 2 full rotations of the tool to remove the bolt from the keeper
Key in Knob / Tubular / Rim Locks
Using the Key Tool

- Insert the stem of the Key Tool into the slot, or into the back of the spring latch and pull or twist toward the hinge side of the door to activate the lock
Through the Lock – Rim Locks

cylinder ring
rim lock cylinder

Forcible Entry
Forcing a Rim Lock – A-Tool / K-Tool

- The back plate is either pulled through the opening, or the set screws are ripped from the back plate
- Insert Key Tool and turn, unlocking the lock

Set the Tool
Pry the Cylinder Up

Back Plate Pulled Through
Turn Key Tool
Forcing a Rim Lock – Driving Off the Lock

- A “shutter” may be installed over the lock mechanism
- This will prevent the insertion of a Key Tool
Forcing a Rim Lock – Driving the Lock

- Drive the lock off the door with the tool inserted in the cylinder hole
Forcing a Mortise Lock

Lock Cylinder Removed

Proper Key Tool

Forcible Entry
Forcing a Mortise Lock

- Remove with **A** or **K-Tool**
- Insert the correct Key Tool (Cam)
- Rotate the Key Tool
  - If the mechanism is found at 5 o’clock, rotate toward 7 o’clock
  - If found at 7 o’clock, rotate toward 5 o’clock
- If mounted with a doorknob, it may have a latch that may be connected to a second assembly
  - This may necessitate a second revolution of the cam to remove the cam from the keeper
  - This second revolution may start a little higher in the opening, ex. 9 o’clock or 3 o’clock
Pivoting Deadbolt –
Principle of Operation

- **Pin Away**
  - Door Locked

- **Bolt Pivots**
  - Into Frame

- **Pin Forward**
  - Door Unlocked
Forcing a Pivoting Deadbolt – K-Tool

Place End of Key Tool Here to Depress Pin

Pin
Forcing a Pivoting Deadbolt – Vise Grips

- All cylinders are held in place with set screws
- Turn the cylinder counter-clockwise to remove it
- After entry is accomplished, the cylinder may be screwed back into the lock box
- Works on most mortise locks
- Usually won’t work when a cylinder guard is present
Forcing Key-In-the-Knob Locks – Outward Swinging Doors

Have a simple spring latch which can be slipped back (opened) with a flat tool such as a Shove Knife

- **Anti-Loitering Pin** may be added to the latch
  - Prevents the insertion of the shove tool without the pin first pushed back
Advantages Over Conventional Forcible Entry

- Speed?
- Less damage – cheaper to repair $$$$$
  - Door remains intact and lock assembly can sometimes be reused
- Better fire control
- Less possibility of injury to firefighters
- Ease of operation
- Security – door can be closed and relocked after leaving building
Padlocks
Light Duty Padlocks – (Standard)

- Shackle
  - ¼” or less
- Lock body
- Keyway
- Can be cut easily with bolt cutters
  - Not case hardened
Heavy Duty – High Security Padlocks

- More difficult to break
- Case hardened
  - Usually need a saw to cut shackle
- Heel and toe locking shackle
  - ¼” and larger
  - Cut both sides of shackle
Special Padlocks –
American 2000 Series (Hockey Puck)

- More secure lock
- No access to the shackle
  - Locking device fits over the staple
- Cut around lock
- Hockey puck lock breaker
- May be case hardened
Cutting American 2000 Padlocks – Rotary Saw

Cut through the body of the padlock \( \frac{3}{4} \)" up from the keyway.
If lock remains engaged after being cut through, strike the side of the padlock with a sharp blow.
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Alternative Hockey Puck Lock Cut

- Cut a 45 above and below the lock
- Peel back the lock with either the pick or forks
Homemade Hockey Puck lock
Cutting Padlocks – Rotary Saw

Exposed shackle

Shielded Shackle
Cutting Horseshoe Padlocks – Rotary Saw

- Cut through the body of the lock and the shackle
- It may be necessary to make two cuts, one at each end of the shackle
Forcing Padlocks – Duckbill lock Breaker
Forcing Padlocks –
Pick of Halligan
Forcing Padlocks – Bolt Cutters

Cutting the Chain

Cutting the Lock
Forcing Padlocks – Hockey Puck Lock Breaker

- Will only work on American 2000 lock
- Will not work if there is a shield around the lock
- Apply downward force
Hardware Used With Padlocks
Alternate (Primary) Means of Forcing – Rotary Saw
Alternate Means of Entry – Halligan

- Place Adz Here
- Throw of Lock
Many doors are self closing, and if not chocked open it could delay other members from entering the building.
Securing the Door

This ensures that the “opened” door does not close and re-lock.

Rigging the Lock

Latch Strap
Revolving Doors

- Usually found in hotels or malls
- Usually locked open for emergencies
  - Not all revolving doors lock open in the same way
  - 3 types
    - Panic proof
    - Drop arm
    - Metal braced
- Considered difficult to force when locked
  - Force swinging door located on either side?
COLLAPSE MECHANISMS OF REVOLVING DOORS

- **Panic-proof type** — Is triggered by forces pushing in opposite directions on the quadrants

- **Drop-arm type** — Is collapsed by pressing the pawl to disengage the arm, then pushing the quadrant to one side

- **Metal-braced type** — Is collapsed by lifting the “gate hook” assembly and fastening it back against the fixed quadrant; hooks are located on both sides of the quadrant
Doors with Drop Bars

- A metal or wooden bar (s) that serve as a locking device when placed or dropped into brackets across an outward swinging door
- Found on most doors in alleyways
- Brackets are usually held onto the door from the outside using Carriage bolts
Forcible Entry
Carriage Bolts

Behind door security bar

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Forcible Entry
Forcible Entry
Doors with Drop Bars

- Some doors will offer no information at all
- Brackets may be attached to the actual doorframe or wall studs
Double Swinging Doors – Drop Bar Assembly Removal

Methods of Entry:
- 45 degree cut at the head of the bolt, cutting through the door skin and carriage bolt shaft
- Cutter must make sure that cuts are made deep enough to cut through bolt shaft
- All bolts must be removed for successful entry
- Cut other locking devices
- Pry outwards
- Bar should drop to the ground
Double Swinging Doors – Drop Bar Assembly Removal

- Use a Halligan to spread the space between the double doors
  - Insert the blade of a handsaw or other narrow tool into the opening and lift the bar up and out
  - Insert the blade of the rotary saw into the space between the doors and cut the security bar
Single Swinging Doors – Drop Bar Assembly Removal

- Grind away carriage bolts with K-12 saw
- Cut other locking devices
- Pry door open
- Bar will then drop to the floor
Removal of Carriage Bolts

Objective: Utilize saw to successfully cut and remove carriage bolts
Drop Bar – Alternative Method

- Cut a hole (triangle) in door large enough to reach your arm in
- Lift bar out of brackets

OVERLAP ALL CUTS

Domer

Forcible Entry
HUD Homes
HUD Homes
Panic Hardware – Wood Door

- Cut door with chain saw to approximately 44” (wood doors)
- Set brake and use saw tip to push on panic hardware.
Panic Hardware – Metal Door

Cut triangle in the door with rotary saw

- Reach through with hand to open door

OVERLAP ALL CUTS

Depends on Heat
Metal Doors – Alternative Option
Panic Hardware +
“Doggy Door” Cut – Outward Swinging Doors

Step 1 - Cut the door below the locking mechanism from left to right

CUT

Step 2 - Insert Halligan and pry outward
Automatic Closing Fire Doors – Single and Double Swinging

- Normally remain open
- Close when the hold-open device releases the door because a fusible link has melted, or activation of either a local smoke detector or a fire alarm system
- Usually found in hospitals, schools, or places of assemblies
- Most interior doors do not lock, but remember to block open to prevent possibly becoming trapped
Automatic Closing Fire Doors – Overhead Rolling

- Designed to close automatically
- Have a barrel that is usually turned by a set of gears
  - Very difficult to force
- Usually found in commercial buildings
- Remember to block open to prevent becoming trapped
Forcible Entry
Forcible Entry
Automatic Closing Fire Doors – Horizontal and Vertical

- Vertical
  - Operate by counterweights
  - Track is at a slight downhill angle

- Horizontal
  - Operate by gravity
Self Closing Fire Doors

- When opened, these doors return to the closed position on their own
- Usually found in stairway enclosures
- Often found chalked open
- Remember to block open to prevent becoming trapped
Scissor / Accordion Gates

- One of the oldest type of security gate
- Among the first barriers that owners put in place to discourage vandalism and break-ins
- Slide in a track to open
Scissor / Accordion Gates

- Can be 2 gates that lock in the middle
- Can be 1 gate that goes in one direction
- Sometimes they are spring loaded
- Often found locked with an American 2000 pad lock in the center
- Usually used with another type of security door (glass, rolling steel, overhead, etc.)
Types of padlocks found on Accordion / Scissor Gates
Accordian / Scissor Gates

Methods of entry:
- Through the cheap padlock by cutting one side of the shackle
- Through the case hardened steel padlock by cutting both sides of the shackle.
- Cutting through the eyes that hold the padlock on the scissor gate.
Accordian or Scissor Gates

Methods of entry:
A vertical cut starting at the highest cross-section (X) of the gate. Continuing the cut through the lowest cross-section (X) member
- Slide gate open
- If you can’t reach the top cross-section (X)
  - A horizontal cut starting on one side and cutting till an appropriate sized opening is created
    - Slide gate open
Underground Parking Security Gates

Construction

Large gates that can roll sideways or lift up
Can have metal detector or weight sensor 5’ to 10’ inside gate

Considerations

- Metal or weight sensors can be activated by throwing a large pry bar inside
- Deactivate gate after entry so gate won’t close behind you
Forcible Entry
Underground Parking Gates

Dislodge pin or bolt and lift door to open
Rolling Electric Gates

Construction
- Large gates that roll sideways
- Electric motor pulls bicycle chain to open and close gates

Considerations
- If it is a loop, cut both chains and roll gate open
- If it is a single chain, cut small section of bicycle chain past motor
Rolling Electric Gates

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Forcible Entry
Chain Link Fence – Construction Features

- Chain link stretched from pole to pole and attached
Wire or pipe on top and bottom area of chain link for support
Chain Link Fences – Cutting an Opening

- Make a vertical cut next to a post
- Keep tension on the portion of fence that is being cut
Chain Link Fences – Cutting an Opening

To create a larger opening, cut the next pole as close to the ground as possible. Pull the cut pole and all fencing back to the next stationary pole.
Chain Link Fences – Cutting an Opening

- If you can’t reach the top of the fence, cut along a channel to the bottom.
Chain Link Gates – Construction Features

Hinge Bracket

- Can be manipulated by manually forcing up or down
Types of Overhead Doors

- Roll Up Doors
  - Rolling Steel
  - Sheet Curtain
  - Sectional

- Tilt Up Doors
  - Wood
  - Metal
Goals of Making Forcible Entry into Overhead Doors

- Make the biggest hole possible for you crews to make entry
- Make the biggest hole possible for your crews to make an exit
- Eliminate all tripping hazards
Why Cut an Overhead Door?

○ Speed
  ● Numerous reasons an overhead door may not open
    ○ Primary and supplemental locks
    ○ Engaged electric opener
    ○ Bent or deformed tracks
Why Cut? (cont.)

- Numerous FFs have been trapped inside a burning structure when an overhead door spontaneously closed during operations (either electrically or via gravity).
- There are numerous methods to protect against a door spontaneously closing.
Keep The Door From Closing

- Bending the track with the fork of the halligan
- Deform the track with a striking tool
- Wedging a hook in the track under the door
  - But, don’t expect someone who “needs” that hook not to take it
- Placing a ladder under the door
- Securing vice grips or a C-clamp to the track
- Disengaging electric operator linkage from the door
- Removing power from the electric operator
Forcible Entry
Why Cut? (cont.)

When an overhead door is raised, the coil springs are loaded with tension

- This creates an extremely dangerous projectile if they fail, which they are likely to do under high heat conditions

- When the springs fail, the door will close in an uncontrolled manner, and its entire weight will have to be lifted manually to re-open it. Torsion or bar-type springs are less dangerous than coil springs, but still present the hazard of allowing the door to close
Why Cut? (cont.)

- An open overhead door creates a void space above it, directly over the entry and egress point, which cannot be effectively hit with a hose stream.
- There is likely to be fire above the overhead door that is not easily recognized or extinguished.
- The ceiling above an open overhead door cannot be opened to check for extension.
Why Cut? (cont.)

- An open overhead door suspends several hundred pounds of material over the entry and egress point from weak metal tracks held up by weaker roller wheels, installed by short (usually loose) log bolts.

- This is clearly a hazard we should avoid working under or even creating in the first place.
Roll Up Door Locks

- Found at the bottom of the doors
- Usually on both sides of the door
- Locked with a padlock
Construction Features of Roll Up Doors

- The bottom of the doors are constructed of a piece of steel angle iron.
- The angle iron helps to give the door some structural integrity and keep it in its track.
Angle Iron

- Found at the bottom of both Rolling Steel and Sheet Curtain doors
- Usually 4” – 6” wide
How can you tell the difference between a Sheet Curtain and a Rolling Steel door?

The Sheet Curtain is one solid piece, therefore when pushed on will it be rigid.

The Rolling Steel door is made up of multiple slats, therefore when pushed on will feel like a mini-blind.
Rolling Steel Doors

- 2” metal slats that slide together in a groove
Rolling Steel Doors

Close-up of Slats  Side view of door

Rolled Steel
Wind Tabs / Rivets

Wind Tabs slide along the inside of the steel channel and help to secure the door.
Wind Tabs / Rivets

- Slats may be riveted every other slat or possibly every slat
- A door with slats riveted every other slat will usually only require 1 Vertical Cut down center of door for a segment to be removed
Rolling Steel Doors
Cut and Pull Method

Make a vertical cut at the center of the door, head height to bottom of the door (cut through angle iron)
Cutting Angle Iron

- A critical construction feature is the bottom angle iron.
- It may be possible to cut through the Angle Iron without lifting Angle Iron up off ground.
Triangle Cut

- This cut allows better blade access to the angle iron.
- This cut is not always necessary when cutting larger doors. Larger doors become more flexible as the vertical cut is being made.
Triangle Cut

If This Cut is Necessary:
- Cut large enough hole to place blade guard inside door
- Triangle cuts can be difficult / Weight of the saw prone to binding
Cutting Angle Iron
This door did not require a diagonal cut to access the Angle Iron
Lifting Bottom Brace or Angle Iron

Two effective ways of lifting the brace are using your Pick Head Axe or Halligan tool.

- The Pick Head Axe seems to give you more leverage in the ground prying the door up and raises the brace higher up off the ground.
Cutting Angle Iron
Pull / Remove Slats

Two Methods:
- Use vice grips or channel locks to pull slats
- Use Halligan or Pick Head Axe for better leverage
Pulling Out Slats

- Start at the middle of your cut & pull Slats out
- After slat is pulled free, all slats below the pulled slat will fall to ground
- Repeat this to the other portion of the door to create larger opening
Forcible Entry
Pulling Out Slats

- The Halligan Tool or Pick Head Axe gives you better leverage
If possible, use chain to raise and secure the rest of the door out of the way.
Forcible Entry
Wind Tabs / Rivets

- This door is riveted every slat and will require a different cutting technique.
Rolling Steel Doors - *Peel Back*

If door has locked channels (rivets every slat)

- Cut down door vertically 1 foot from the edge
  - (Cut triangle to make access to the angle iron – if needed)
- Cut through angle iron
- Cut horizontal – shoulder high to the channel
- Open door – Peel Back

OVERLAP ALL CUTS
Rolling Steel Doors – 3 Cut and Pull

- Cut down door through the angle iron
- Cut down 1 foot off the edge through the angle iron
  - Pull slat between cuts
- Cut down 1 foot off of the edge on opposite side
  - Pull slats between cuts
- Clean up path of travel
Rolling Steel Doors – Drop Cut

1. Cut down door 1’ away from the side
2. Cut triangle to make access to angle iron – if needed
3. Cut angle iron
4. Cut horizontal – shoulder high
5. **Cut down door 1’ away from the obstruction – 1’ under the horizontal cut**
6. **Finish the cut between the horizontal and vertical cuts**
7. Remove door

OVERLAP ALL CUTS
Sheet Curtain Doors

- One solid piece of metal
Sheet Curtain

Curtain close-up

Side view of door

Pressed panel
Sheet Curtain – Peel Back

1. Cut down door 1’ away from the side
2. Cut triangle to make access to angle iron – if needed
3. Cut angle iron
4. Cut horizontal – shoulder high (to the channel)
   - Open door completely

OVERLAP ALL CUTS
Sheet Curtain – Drop Cut

1. Cut down door 1’ away from the side
2. Cut triangle to make access to angle iron – if needed
3. Cut angle iron
4. Cut horizontal – shoulder high
5. **Cut down door 1’ away from the obstruction – 1’ under the horizontal cut**
   1. Cut through angle iron
6. **Finish the cut between the horizontal and vertical cuts**
7. Remove door

OVERLAP ALL CUTS
Forcible Entry
Sectional Doors

- Usually 2’ pieces (light weight metal or wood) ribbed together with solid metal connectors
- Residential or commercial
- Do not roll up
  - It could roll down and trap FF’s
  - It could fall off of the tracks and injure personnel
  - If up, secure
    - Beat on the tracks
    - Vice grips
    - 4x4?
    - Firefighter
Sectional Doors

- A key point for cutting a sectional door is to avoid making your horizontal cut on the seams of the door.

- Make sure that the cut is made in the middle of the section.

- Pay attention to the material used to make up the door. You may have to use a chainsaw on a wooden door.
Sectional Doors – Peel Back

1) Cut down door 1’ away from the side
2) Cut triangle to make access to angle iron – if needed
3) Continue first cut through bottom of door
4) Cut horizontal – shoulder high, avoiding the seams (to the channel)
   - Open door completely – peel back
   - Secure door

OVERLAP ALL CUTS
Sectional Doors – Drop Cut

1) Cut down door 1’ away from the side
2) Cut triangle to make access to angle iron – if needed
3) Cut angle iron
4) Cut horizontal – shoulder high, avoiding the seams

5) Cut down door 1’ away from the obstruction – 1’ under the horizontal cut
   1) Cut through angle iron
6) Finish the cut between the horizontal and vertical cuts
   ○ Remove door

OVERLAP ALL CUTS
Overhead Tilt-Up Doors
Overhead Tilt-Up Doors

- Ribbed or nailed together to a set of bracing
  - Wood or metal
Wood Overhead Tilt-Up Doors

- Cut pad lock and raise the door
- Fire
  - Cut 1 foot from the side
  - Cut a horizontal cut to the other side
    - Try and peel back
  - Cut 1 foot from the other side
  - On both of the vertical cuts, cut through the bottom braces

OVERLAP ALL CUTS
Metal Overhead Tilt-Up Doors

Methods of Entry:

- One horizontal cut; avoid pop-rivets and bracing.
  (blade depth will not penetrate framework)
- Pull skin to expose bracing.
- Cut framework or break with a striking tool
  (extremely time consuming)
Metal Overhead Tilt-Up Doors
Overhead Tilt-Up Doors – Personnel Doors

Methods of Entry:
- Attempt to force personnel door
- Cut door
Wrought Iron Fences

- Found at both residential and commercial locations
- Can be laddered to gain access
  - Requires 2 ladders
  - Ladder both sides of the fence
Cutting Wrought Iron Fences

- Cut fencing closest to a main post
  - Try and bend back and break at other connection point
- Cut fencing closest to the other main post
- Remove the complete panel
- Try not to cut the smaller, individual posts
  - Requires a lot more cutting
  - Sharp edges remain
Forcing Windows

Breaking glass is the most common technique

But:

- May slow entry into the structure while the glass and frame are being cleared
- Can disrupt ventilation efforts, intensify fire growth, and draw fire to uninvolved areas

Not the first choice for entry into the building
**Breaking Glass**

- Wear PPE’s
- Choose a tool suitable for breaking glass
  - Stand to the windward side of the window
  - Using the tool properly, strike the glass at the top of the pane (plate glass)
  - Try to keep hands above the point of impact
  - Remove the jagged edges by sweeping the tool around the frame
Casement Windows – Hinged

- Hinged on one side and opens outward with a crank.
- Locked in the middle
- Extremely difficult to force
  - Break out the lowest pane of glass
  - Clean out the sharp edges
  - Reach in to unlock the latch
  - Operate the crank or lever
Projected Windows – Factory

- Hinged on the top or bottom and opens outward with a crank
- Difficult to force
  - Break out the lowest pane of glass
  - Clean out the sharp edges
  - Reach in to unlock the latch
  - Operate the crank or lever
Louvered Windows –
Jalousie and Awning

- Several slats of glass
- Opened with a crank
- Most difficult to force
- Requires removal of several panels to permit entry
- Avoid unless absolutely necessary

Figure 3
*Picture taken from IFSTA Essentials*
Sliding Windows (Horizontal Sliding)

- Slides open horizontally
- Locks in center of window
- Burglar lock or bar usually added
Double Hung - (Vertical Sliding)

- Slides up and down
- Lock is usually secured with small wood screws
- Easiest to force
- Pry either upward or downward
  - Breaks lock
Security Window Mesh

- Found on most commercial high crime buildings
- Involves a considerable amount of time
- Cutting – Rotary Saw
  - Leaves sharp edges
- Try and break away from building
Window Bars

- These obstacles come in a variety of sizes, shapes, and strengths
Window Bars

Usually secured to a window at four points
Mounting point may be a lag bolt into the mortar or brick, or the mounting point may be part of the brickwork.
Try Before You Pry
Solid Window Bars

- Cut away one side
- Pull back on bar
- Usually breaks the connectors
- **If unable to break connectors - cut other side**
Forcing window bars – Rotary Saw
Hollow Window Bars

- Usually found on residential
- Hollow bars attached to a solid connection point
- **Cut hollow bars**
- Slide hollow bars away from solid metal connectors
  - or
  - Bend bars back
Forcing Window Bars – Halligan
Forcible Entry
Emergency Release
Window Bars

- Cut at emergency release connector
- Hinged on one side
- Swing open
Window Bars – Check Before Cutting
Roll Up Door With an Aluminum Frame
Double Door (reinforced)
Rolling Steel Door Behind a Nail Mounted Sectional Door
Sheet Curtain Roll Up Door With a Scissor Gate
Hidden Roll Ups

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Forcible Entry
Double Metal Clad Door With a Barred Security Door
Scissor Gate Securing Entry Into a Business
Multiple Security Doors on a Business Entry
Aluminum Frame Entry, Scissor Gate, and Security Gate
American 2000
(Hockey Puck Security Lock)
Welded Door
Backward Door

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Forcible Entry
Aluminum Frame Entry with a Chain Link Fence
Fake Door
Aluminum Frame Double Doors with a “Secondary” Locking Device
Aluminum frame Double Doors with Multiple Locks
Security Gate
What is the weak link?
Aluminum Frame Door
Are the padlocks a problem?
Conventional Forcible Entry
Problem???
Don’t Assume

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Forcible Entry
Positive Lock

- Remove lock cylinder with key
- Insert device tool and turn clockwise to open door

For firefighters access only

Instructions for use on the back

Forcible Entry

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Forcible Entry (Exit):

Technique used to gain access into a structure whose normal means of entry is locked or blocked

- Efforts do minimal damage to the structure or structural components and provide quick access
- Should not be used when normal means of access is readily available
- May be needed as a means of escaping from a burning or compromised building
References

- Essentials of Fire Fighting, IFSTA, 5th Edition
- Truck Company Operations, John Mittendorf, 2006
- Forcible Entry Reference Guide, FDNY
- Vententersearch.com
REMEMBER:

Forcible Entry = Forcible Exit