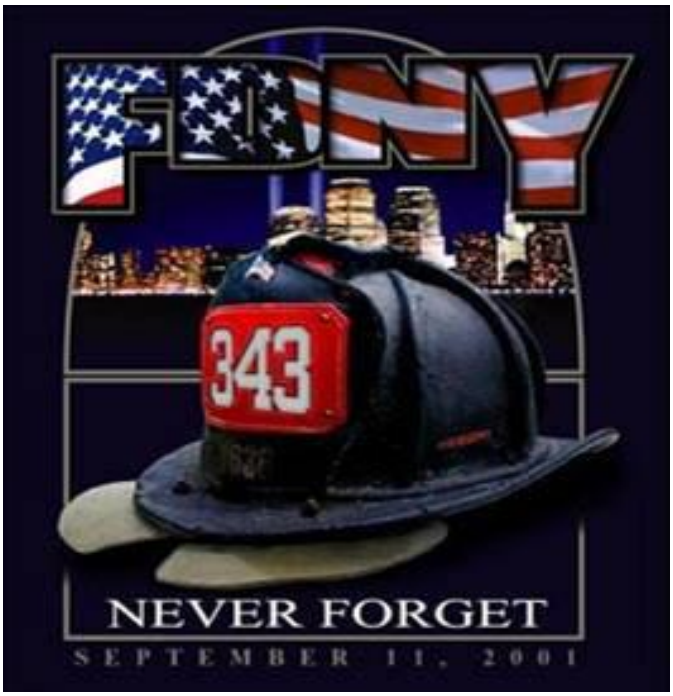
# FORCIBLE ENTRY REFERENCE GUIDE

# TECHNIQUES AND PROCEDURES



# DEDICATION

The effort to complete this manual is dedicated to the sons of Captain John Vigiano, Firefighter John T. Vigiano II (Ladder Company 132) and Detective 2nd Grade Joseph V. Vigiano (NYPD-Emergency Services Truck 2) and all of the first responders who gave their lives on September 11, 2001

The first responders that fateful day, were true professionals who knew the risks and dangers that awaited them in those buildings. They never wavered or deviated from their assignments when they entered the towers. They provide inspiration to us as family members and as members of the FDNY. It is our hope that this manual will benefit other young professionals in their careers as firefighters.

## INTRODUCTION

The objective of this manual is to provide the reader a comprehensive study of forcible entry. Although it cannot cover every aspect or technique of this demanding skill, it does cover those techniques that have proven to be successful for members of the FDNY.

The skill of forcible entry has been part of the fire service since its inception. The ingenuity and foresight of many talented people developed these techniques, which were then handed down through the generations of firefighters by "on-the-job training." It is our privilege to honor these people for providing the motivation and drive to put this material together. The goal of this book is not to take credit for these techniques, but to bring them all together for the benefit of the current and future members of the FDNY.

A program of training can be developed from using this manual, the forcible entry lock-board and the forcible entry training DVD that has been provided to the field.


## ACKNOWLEDGEMENTS

This manual was compiled by Captain John Vigiano (Ladder Company 176- Ret.) with the assistance of several experienced and knowledgeable members of the FDNY. They are Captain Robert Morris (Rescue Company 1), Lieutenant Mickey Conboy (Squad 41), Captain Bill Youngston (Ladder Company 133- Ret.), Captain Dennis Murphy (Squad Company 288-Ret.), BC Stephen Geraghty (Battalion 50), Firefighter Kenneth DiTata (Ladder Company 111), Firefighter James Cody (Ladder Company 24), and Firefighter John Faracco (Ladder Company 28- Ret.). Assistance with the illustrations were provided by Zack Herman (Bridgeport FD) and Joe Fisher.

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## Chapter 1

# Forcible Entry History

# FORCIBLE ENTRY HISTORY

Everyone associated with the fire service is familiar with the term "fire stories." Whenever a group of firefighters come together, the stories begin to start. They may be about a fire they just fought or the firefighter who performed a daring rescue or simply, a critique of an operation. Whatever the topic may be, as the years go by the story seems to get a bit better every time it is re-told.

In the New York City Fire Department (FDNY), most of these tales are centered around the kitchen table. They usually begin at the start of the tour when the members report in for duty. If a story is good, it will carry over to the lunch meal and sometimes into the evening meal. You know a story is exceptional when you begin to hear it from other units when you come together at an operation. In the Marine Corps we often called these tales, "sea stories." No matter what they are called, they were usually entertaining and in most cases there was something to be learned from them.

When I first became a member of the FDNY, I had the opportunity to work in a relatively busy ladder company in the East New York section of Brooklyn. As a new member, I was constantly trying to learn from the more senior members. Some of these men had been on the job for nearly twenty years and were quite willing to share their experiences and knowledge. This was especially true during the late watches, the "twelve-bye" (12 x 3) or the "three-bye" (3 x 6). It was during these lonely hours that I first heard of Chief Hugh Halligan.

Hugh Halligan had been a member of the FDNY from 1916 to 1959. In a span of 43 years, he rose up from probationary firefighter to Deputy Chief. In 1941, Hugh Halligan was appointed to the rank of First Deputy Commissioner, a position he held for a few years before returning to the uniform ranks. During his tenure he worked in all eleven of the FDNY's bureaus.

As a young firefighter eager to learn about my job, I was not interested in the political or promotional achievements of Hugh Halligan, I was interested in a tool that carried his name; the Halligan Tool.

Most tools or equipment used in the fire service are rarely designed specifically for the fire service. In fact, most start out in a different role. Usually a firefighter adapts or modifies a particular tool or device for use in firefighting. The "Halligan" was a tool designed by a firefighter and made specifically for the fire service; Hugh Halligan was the man that accomplished this.

### The Claw Tool

Webster's dictionary defines "folklore" as a noun meaning a popular superstition or legend, the study of traditional beliefs. In firematic folklore, there is a story about a fire in a bank somewhere in lower Manhattan back in the early years of the New York City Fire Department. As the story goes, the fire was set to cover the traces of a burglary. As the firefighters were "overhauling" (sifting through the rubble), they came upon a tool that was unusual in design. Further investigation determined this tool was used to force entry into the bank. The men reasoned that any tool that was efficient enough to gain entry into a bank would be ideal for the fire service. (Note, banks back then were not the fortified fortresses we have today.)

The chief requested permission to keep the tool and gave it to the Ladder Company to add to their inventory of equipment. This particular tool was approximately 36 inches long and weighed about 12 pounds. At one end it had a "hook" and the other end a "fork." Because of its unique design, it was dubbed the "Claw Tool." Soon, this tool reproduced many times over, became the main forcible entry tool for the New York City Fire Department.

As effective as it was it was not designed correctly for the task it was given. To illustrate, if the driving head of an ordinary chisel was curved in the same manner as the corresponding part of the Claw Tool, a hammer blow would strike off center causing many craftsman to have to buy three fingered gloves. Since the main function of forcible entry at that time was to "jimmy" open a door by driving the fork end of the tool between the door and the doorframe with the aid of an axe, there was left little margin for error. Many firefighters who used this tool were left with sore and bruised elbows and arms.

**The Kelly Tool**

Throughout the years, many excellent forcible entry tools were introduced to the fire service. None were as progressive as the "Kelly Tool" which was designed by Captain John F. Kelly of the New York City Fire Department. Captain Kelly, while assigned to Ladder Company 163, took the first step in making a tool that had a straight drive for impact. By removing the "hook" he lessened the possibility of hitting off-center, but did sacrifice the advantage of the "hook" of the Claw Tool. His tool, like the Claw Tool, was made of heavy steel approximately 24 inches long. One end had an "Adz" at 90 degrees to the shaft and the other end of the shaft had a chisel. The weight was also approximately 10 pounds.

**"The Irons"**

Since the Claw Tool had the desired features of the "hook" and the "fork" and also the fact that it had been around for quite some time, made it very popular with the firefighters. It was considered the primary forcible entry tool. The Kelly Tool (also known as the lock breaker) offered a straight drive with either the adz or the chisel. Together, these two tools could force just about any door or locking device. As the years went by, these two tools became known as "the irons" and were usually carried by the firefighter charged with the responsibility of forcible entry. This man usually connected these heavy tools with a short piece of rope and hung them over his shoulders…hence the term, "Irons man."

**The Halligan Tool**

Since these tools were heavy and unwieldy, the tools often mastered the man. It was apparent that a lighter but equally efficient tool was needed. Chief Halligan recognized this problem and with the backing of Fire Commissioner John J. McElligott, he set upon a project to design such a tool.

For the next couple of years he worked on designing a tool that he knew had to be perfect, for firefighters are not swayed very easily. When they have something that works, they generally do not like to change. They had to have faith in the tool for it to be accepted. His design gave the firefighters the solid feel they wanted at the three driving heads. The lightness (8 ¼ pounds) and

strength permitted the use of the tool for long periods without fatigue. One end of the tool had an adz and pike. The adz had a sweep to it that was an improvement over the Kelly Tool. The "pike" (at a 90-degree angle to the adz) replaced the hook of the Claw Tool. The other end of the shaft contained the fork, which was so popular with the old Claw Tool.

It seems Chief Halligan was so pleased with his finished product he began his own mill to manufacture and distribute these tools. Soon he began to sell them to fire and emergency units nationwide. By 1950, every ladder company in the city of Boston was outfitted with the new "Halligan Tool," but not New York City. Once again, folklore has it, that the city administration believed that since Chief Halligan worked for them (he was a deputy chief at the time) he should not be selling his tools to them at a profit…Chief Halligan felt otherwise. Not only would he not sell his tool to New York City, but also he had his design patented to protect his interest. He would however, sell the tool to individual firefighters or units, but not to the City of New York.

In 1963 I purchased a Halligan Tool directly from Chief Halligan with monies collected from members of my company. At the same time, I bought a Halligan Hook, another of his patented tools, which we could not requisition through the Fire Department at the time. As the fire duty increased, so did the demand for more tools. By the time Chief Halligan's patent had run out, similar tools in design began to appear. As expected, the City began purchasing and issuing these tools to units. Ironically, individual units still continued to buy their own Halligan Tools from anyone who would sell them.

During New York City's busiest times (mid 60's to mid 70's), not only did the fire duty exceed all expectations, but also security measures took on a new meaning. Private homes became as secure as banks. With a variety of alarms systems, security gates and an unbelievable assortment of lock and locking devices, forcible entry became an art as well as a skill. Through it all the Halligan Tool stood up. More and more units relied on this tool to overcome the daily challenges.

Original Halligan Tools are no longer produced. The tools that have followed Chief Halligan's design were at first not as good, but today they have improved on the original design and have made a better tool. Today there are small hydraulic assisted tools used to gain entry. Unfortunately, these devices are mechanical and mechanical tools break down. The firefighter must always know how to use the basic forcible entry tools, the axe and the Halligan Tool, to gain entry.

As stated earlier, firefighters are a unique breed of people. Given a challenge, they will adapt, modify and do whatever it takes to overcome an obstacle. However, it is Hugh Halligan's design that is the benchmark of the forcible entry tool. Chief Halligan passed away in 1987, but his legacy will live on forever in the "Halligan Tool."

From the tools available, to the types of doors they will encounter and the assortment of locks they will have to overcome, we the authors, have tried to give the firefighter a comprehensive look at forcible entry based on over 100 years experience.

John T. Vigiano
Captain FDNY (Retired)
1962-1998

## Chapter 2

# THE BEGINNING

# THE BEGINNING

In the fire service, the term **"forcible entry"** is defined as the act of gaining entry into a building or occupancy via a door, window or even through a wall**, by the use of force.** Back through the years, the fire service has been charged with this responsibility of gaining entry into secured buildings and occupancies.

Forcible entry has always been a primary goal of the fire service. Over the years, the types of tools used for this purpose have evolved quite a bit. How many people out there can recall a "Callahan" door opener, the Buster Bar, Hale, Detroit or Pirsch door openers; the past generations of the current Rabbit Tool, or Hydra-Ram?

All of these tools had their place in the fire service. Technology and the imagination of skilled people designed lighter and more versatile tools. But the heart and soul of forcible entry usually comes down to two firefighters gaining entry through a door with a **"Set of Irons."**

**The Claw Tool**
Where did this term "irons" originate? According to Hugh Halligan, the man who invented the Halligan Tool, many years ago firefighters responded to a fire in a bank. The fire was started to cover a burglary. In their haste to leave with the money, the thieves left behind a tool used to gain entry into the bank. This tool was a heavy length of steel with a fork on one end and a claw on the other end. The firefighters who extinguished the fire reasoned that any device efficient to break into a bank would be ideal for fire fighting. The firefighters adopted it as their own forcible entry tool. Many believe this was the first tool specifically designed for forcible entry.

**The Kelly Tool**

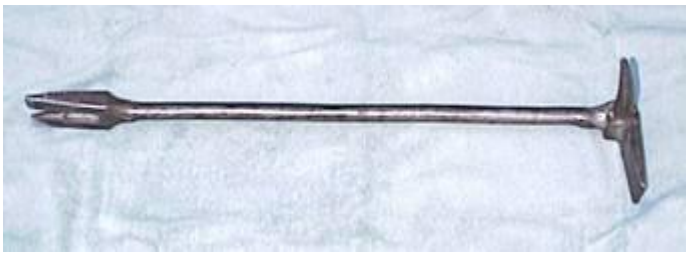
Whether or not the story is true, the Claw Tool was used by the fire service for many years. Over the years, other tools were introduced to the fire service. Many were excellent, but were limited in their application. Then along came the Kelly Tool which received its name from the inventor, Captain John F. Kelly of H&L 163 (FDNY). His tool had a chisel at one end and an adz at the opposite end. The advantage of this tool over the Claw Tool was the striking area, which was in direct line with the bar. This tool was also known as the "Lock Breaker." It was designed as an alternate forcible entry tool to the Claw Tool.

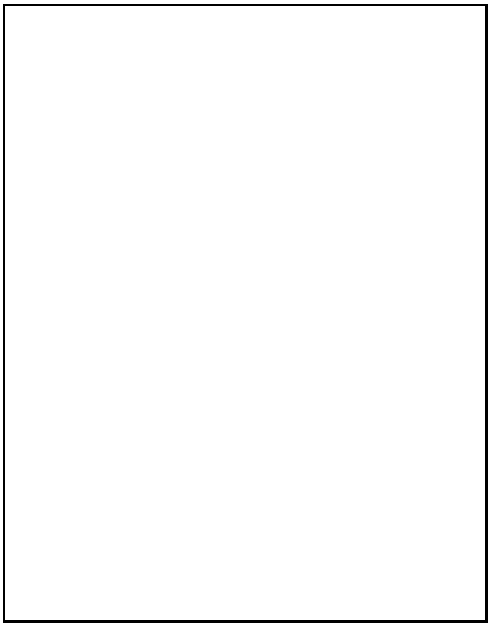
**The "Irons"**

The Claw Tool was still very popular with firefighters, especially its hook feature which gave quite a bit of leverage for forcing padlocks and scuttles. The Kelly Tool found its place by offering the straight drive of the adz and chisel. Together these tools could force just about any door or locking device. As the years went by, these tools became known as the "Irons" and were carried by the firefighter charged with the responsibility of forcible entry. Since they were usually carried connected by a short length of rope (hose strap) and hung over the shoulder of the member carrying them, he became known as the "Irons Man."

**The Halligan Tool**

Since these tools were quite heavy and unwieldy, the tools often "mastered the man." A lighter but equally efficient tool was needed. Along came Chief Hugh Halligan, FDNY, who took the design features of both tools and incorporated them into one hand tool. This tool had three driving heads. It was light (8 ¼ pounds) and incorporated the fork at one end and the adz and a slightly curved pike (instead of the claw) at the other end.

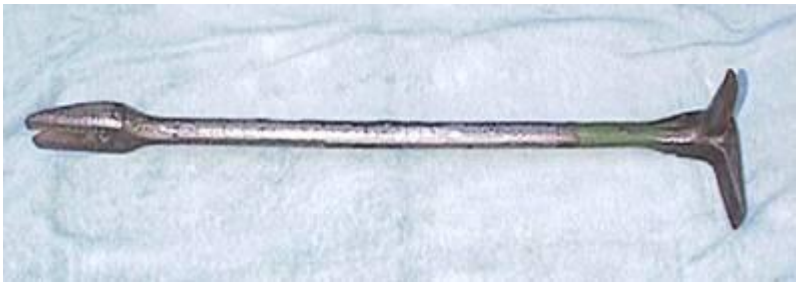




**Chief Hugh Halligan With, The "HALLIGAN TOOL"**

**The Ziamatic Tool**

In the early sixties, fire duty began to increase in New York City. At that time, the only tools the FDNY was issuing to its units were the Claw and Kelly Tools. (Folklore has it that Chief Halligan would not sell his tool to New York City.) Today we have many variations to the Halligan Tool. Some are even better than the original.



Some manufacturers took this good tool and made it better, others just copied the original design. One such company, the **Ziamatic Tool Company** began reproducing a similar tool. This was one of the many variations to the original Halligan Tool. It was quickly purchased by the New York City Fire Department to augment their limited supply of forcible entry tools.

**The Pro-Bar**

This tool has quickly become the FDNY's primary forcible entry tool. Many young firefighters consider this "the Halligan Tool," but it is just one of many copies of the original design.

This particular tool was also the brainchild of former New York City firefighters. They took the original tool and combined the better features of the Claw and Kelly into a better designed tool; hence the "Pro-Bar."

**Comparing the "Original" with the "Pro-Bar"**
The original Halligan Tool was unique to forcible entry. Combining many tools into one compact, hand tool took a keen mind. Chief Halligan did indeed make a revolutionary tool. However, there were some shortcomings with the original design.

The blunt fork and short narrow adz may have been effective in the early years, but due to new security technology, the original tool became inefficient. A simple modification to the original design proved to be quite effective. To this day, the modifications produced have proven to be most effective for a hand tool.

The fire service had been challenged to find other methods of gaining entry. At times it may require a different technique, more skill and stronger tools to accomplish this. This manual will attempt to:

- Outline principles, methods and techniques that will insure the effective use of forcible entry in training and in fire operations.
- Promote uniformity in training.
- Provide a handbook for the teaching and learning of forcible entry.

## Chapter 3

# RESPONSIBILITY

## RESPONSIBILITY

Again it is important to understand that the fire cannot be extinguished, searches cannot be made, and extension of fire cannot be checked until entry is made. The fire fighter assigned the job of gaining entry is given that responsibility. To accomplish this task, there are an assortment of tools and techniques, which this text will introduce to you. Some techniques are basic, others are more difficult, but all are achievable.

**Proficiency:**
Why all firefighters should be proficient in the basic forcible entry skills.

- **The need for speed in gaining entry.** It is important to realize that most fire and emergency operations start at the front door or main entrance. Before any tactical moves can be made, e.g. search, rescue or the stretching of a hand line to the seat of the fire , the entry door has to be opened.
- **Reduce damage resulting in improper techniques.** Most people given tools can gain entry. A door can be "battered" down with an axe (the movie version). However, until we take into account what is behind that door, we want to ensure the door's integrity. Why destroy a perfectly good door for a non-fire emergency? With the proper training, most firefighters will be able to open a door with minimal damage.
- **Professionalism.** This is the benchmark of a good firefighter. The firefighter represents the department and ultimately the city or hamlet. 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. Remember that when we leave the fire scene, the doors we destroy leave the occupants vulnerable to further loss from vandalism. The people we are sworn to serve rely on our good judgement.

**Jimmying A Door:**
The old technique of **"jimmying a door" (**the spreading of the door away from the jamb without damaging the lock) can seldom be accomplished today. This is due to stronger doors, more formidable locks and multiple locks on a single door.

**The primary motivation should be professionalism**. As a firefighter, you have an obligation to get the job done **safely, efficiently and with the least amount of damage.** At times, brute force must be combined with skill, technique and knowledge. You control that action.

For situations such as: water leaks, steam leaks, lock-ins, etc, consider the least damaging means of gaining entry. In some instances, you may be able to enter through a window or by using a "Thru-the-Lock method of entry. Always **use common sense** when forcing your way into any premises; you never know what is behind that door or window.

You must also consider what will happen once your job is done. Who will provide security for the occupancy after you leave?
In order to become proficient in the skill of forcible entry, you should have a mixture of:

**Hands on training-** this is the primary way to sharpen your skills.

**Experience-** by going to fires and emergencies and actually "forcing the door."

**Knowledge-** may be gained by experience, reading, observing, attending training seminars and also by exchanging information and ideas with other firefighters.

Finally, using some **common sense** and trusting your instincts; they are usually correct.

**"Why Are You There?"**

What are the reasons for entry? Is it a **Tactical Response?** That is, for a fire and/or life-threatening emergency, or is it a **Routine Response** for a non-life-threatening emergency? In either situation, control, speed and effectiveness of access to the area of operations will justify the amount of damage done by the firefighter. Remember, the goal is to: **save life, extinguish fire and control all hazards.**

**Size-Up:**

**This is the ongoing evaluation of the problems confronted within a fire situation**.

As you get off the apparatus, you should be asking the following questions:

Where is the fire?
How many floors?
What type of occupancy?
What type of building?

Size-up starts with the receipt of an alarm and continues until the fire is under control.
This process may be carried out many times and by many different individuals during a fire or an emergency.

**In conducting a size-up we should consider the following:**

- **Occupancy:** Knowing you are responding to a residential or commercial occupancy will help determine the type of doors and locks you may encounter. This will help determine what specialized tools may be required.

- **Door:** Knowledge of the type of door and its components may guide you as to proper tool placement and method of entry. This would include:

  1. **Direction of door opening:** most **residential doors** open into the occupancy. They are considered **inward opening** (away from you). Whereas in **commercial occupancies,** the door opens out of the occupancy. They are considered **outward opening** (toward you).
  2. **Door Frame:** A structural case or boarder into which a door is hung. Also referred to as a **Door Buck**, **Door Jamb** or simply, the "**Frame**." They can be made of metal or wood.
  3. **Hinges:** There are many types of hinges used today. The types we discuss here will be known as (a) standard, (b) self-closing, and (c) pin type.
  4. **Replacement Door:** A new pre-hung door and jamb installed into an **existing** doorframe.

- **Locks:** To determine the degree of difficulty in forcible entry you should have a working knowledge of the **various types of locks** as well as a basic understanding of how they operate and how they are installed. One should also take notice of how many locks are present and where they are located on the door.

- And finally, you should always **TRY THE DOOR KNOB - "is the door open?"**

# Chapter 4

# TOOLS

# TOOLS

The success of any job resides in the knowledge of the tools and their correct application. Listed here, within categories, are many of the tools used in forcible entry:

**Conventional Tools**

- Axe (6 and 8 pound)
- Halligan Tool
- Maul (10 pound)
- Halligan Hook (steel shaft)

**Thru-the-Lock Tools**

- K-Tool and Key Tools
- Lock Puller (Officer's Tool)
- Shove Tool
- Vice Grips (may be used for Padlocks, Thru-the-Lock)

**Hydraulic Tools**

- Hydra-Ram
- Rabbit Tool

**External Lock Tools**

- Bam-Bam Tool
- Duckbill Lock Breaker
- Bolt Cutter
- Pipe Wrench with Cheater Bar

**Power Tools**

- Power Saw
- Cordless Drill/Cordless Sawzall

**Specialty Tools (Limited use)**

- Torch
- Battering Ram
- Vice Grips (may be used for Padlocks, Thru-the-Lock)

**Modified Tools** – Standard tools/devices that have been modified for use in the fire service.

- Channel Lock Pliers
- Key Tools
- Padlock Tool
- 8-Pound Axe

The following are brief descriptions and reasons we chose the above tools for **Forcible Entry.** There may be firefighters that have a different approach or use different tools to accomplish the same end, but these are the tools we have used and are most familiar with.

## CONVENTIONAL TOOLS

**Axe (6 and 8 pound):** This should be a **FLAT HEAD** type axe and not a pike head axe. The purpose of this axe is to drive (SET) the Halligan Tool. There are two sizes available and choice is up to the unit. The 6-pound axe can easily be "**married**" to the Halligan Tool for carrying.

The 8-pound axe may not "marry" up due to its blade size. However, notching the blade can modify this. (See "Tips and Techniques" Chapter 16.) The 8-pound axe will deliver more power to the Halligan Tool. Either axe should be "dressed," e.g. the striking part of the axe should be filed and kept square. Avoid having the crown of the axe from "mushrooming" over.

The axe with the Halligan Tool form the "Irons" which are the basic forcible entry tools. The axe can also be used to:

- "Chock open" the door.

- Be a backstop for the Halligan or hydraulic tool (Hydra-Ram).

- Hold the purchase when repositioning the Halligan Tool.

**Halligan Tool:** There are many models of this popular tool. The one illustrated here is approximately thirty inches long with a beveled fork, a tapered adz and pike. For more details refer to "Conventional Forcible Entry," Chapter 8.

## Pro-Bar Halligan Tool

**Notch in Axe Blade**
By filing a notch into an 8-pound axe, a Halligan Tool may be "married" to it allowing the member to carry both tools in one hand.

There are straps that are sold commercially to join the two tools, but it just adds to more equipment to carry and be responsible for.

**Maintenance of the Irons**

Proper maintenance of tools and equipment is the first step in tool safety. Tools should be inspected and cleaned on a regular basis. Always check for wear and damage. If equipment is found damaged it should be removed from service until repaired or replaced. Proper care of forcible entry tools will increase their serviceability.

**Metal parts**

- Remove any dirt or rust with steel wool or emery cloth.
- Use a metal file to maintain the proper profile and cutting edge.
- Sharpen edges and remove any burrs with a file.
- Do not keep the blade edge too sharp as this may cause it to chip when in use.
- Do not grind the blade as this may overheat the metal and cause it to lose the temper.
- Do not paint the metal parts, but keep them lightly oiled if desired.
- Never apply oil to the striking surface of a striking tool (axe or Halligan).
- "Dress" the edges to keep square and free of burrs which may splinter off when striking tool.

**Wood and Fiberglass Handles**

- Clean with soap and water; rinse and dry completely.
- Check for damage and sand off any splinters.
- Do not paint or varnish the handle. A small band of paint or brand may be used to identify the tool.
- Ensure the head of the tool is securely fastened.
- Use tape to mark off a narrow stripe on handle to identify unit.

**Maul (10 pound):** This tool comes in a variety of sizes, but the most common and versatile is the 10 pound model. This tool may be used in place of the axe to form the "Irons." Other uses would be to "batter" a door or to remove cinder block from a window or door of a vacant and sealed occupancy.

**Halligan Hook (steel shaft):** This tool is a six foot, steel shaft hook, with a distinct shaped head and is commonly referred to as a "Halligan Hook."

These are primarily "pulling tools," e.g. for pulling ceilings. For entry, the steel shaft can be used to set the Halligan Tool into a tight doorframe (such as a bulkhead type door) by "toeing" on the end of the shaft and driving the Halligan Tool with the shaft.

**Metal Halligan Hook**

**Fiberglass Halligan Hook**

## THRU-THE-LOCK TOOLS

**K-Tool:** This tool was developed for pulling a lock cylinder (Thru-the-Lock entry) on a door. It is used with an axe and Halligan Tool.

The K-Tool is forced behind the ring and face of the cylinder until the wedging blades take a bite into the cylinder body. Light blows with the axe set the K-Tool.

The Halligan Tool's adz is placed into the slot on the face of the K-Tool and pried upwards, pulling the cylinder from the door.

**Lock Puller:** It is a device developed from a modified nail puller called the "Sunilla Tool," named after its inventor, Captain Sunilla (FDNY). This is one of the first tools designed to pull cylinders out of locks. It is also useful for opening automobile trunks.

There are various designs and shapes being sold throughout the country. They have a wide variety of names and uses. In certain parts of the country, this tool may be carried by the officer (hence the Officer's Tool).

**Sunilla Tool**

**Officer's Tool FDNY**

**Shove Tool:** It started out as a device to slip the latch on a door. Many were first produced by enterprising firefighters from old hand saw blades or similar materials. Today, tool manufacturers are producing them. It is flexible, 10 gauge sheet steel, approximately eight inches long by one and half inches wide. The device is slid between the door and the doorframe above the spring latch. Once the "hook" end catches the latch, the tool is pulled toward the operator which depresses the spring latch opening the door. **It only works on outward swinging doors.**

**Vice Grips:** A very useful tool for any firefighter's tool box. This locking pliers can be used to "unscrew" a mortise lock cylinder from the lock housing or to simply hold a padlock while it is being cut with a power saw.

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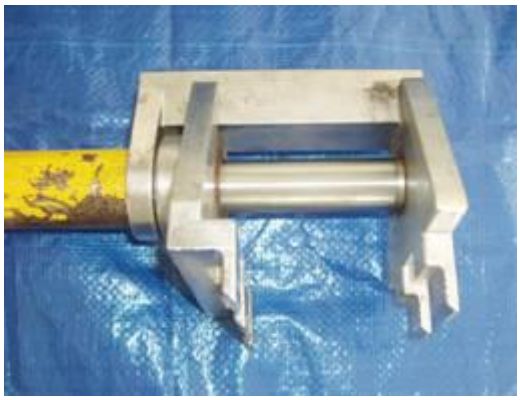
## HYDRAULIC TOOLS

These tools are used for forcing inward swinging doors. They work best on doors mounted in metal frames. They have also been used to force sliding doors found on passenger elevators. More information will be found in Chapter 9, Hydraulic Forcible Entry Tools.

**Rabbit Tool:** One of the first hydraulic forcible entry tools to be introduced in the FDNY. It is a two-piece unit connected by a high-pressure hose. The large jaw will spread force over a greater area. It exerts over four tons of force with a jaw spread of approximately six inches. The weight of the tool is 25 lbs. The pump is designed to be operated in the horizontal position, but may be used vertically if the hose is facing down.



**Hydra-Ram:** The second generation hydraulic forcible entry tool to be introduced to FDNY. This is a one-piece unit weighting 12 lbs. The maximum force the tool will exert is five tons with a jaw spread of approximately four inches.

## EXTERNAL LOCK TOOLS

**Bam-Bam Tool:** Also known as a "Slap Hammer." This tool was primarily used in body shops to pull dents out of automobiles. It has proven quite successful in pulling lock cylinders from many padlocks. It requires a good quality self-tapping screw. More on this in "Padlocks," Chapter 13.

**Duckbill Lock Breaker:** Another tool that was modified from a laborer tool, the "Pick-Axe." It is used to drive the body of the padlock off the shackle. The long tapered head is placed into the shackle of the padlock and driven down with a flat head axe, maul or even the Halligan Tool.

**Bolt Cutter:** Another tool used for cutting hasps, light-duty padlocks and chains. It is limited by the opening spread of the blades. It is not recommended for cutting case-hardened shackles since that may damage the cutting blades. If possible when cutting, try to cut the staple holding the padlock. If you have to cut the padlock, cut both sides of the shackle.

## EXTERNAL LOCK TOOLS

**Pipe Wrench With a Cheater Bar:** This is a large pipe wrench with a piece of pipe over the handle to give the operator more leverage. With a little initiative from the user this tool can be modified to gain additional leverage.

## POWER TOOLS

**Saw:** The Power Saw improves forcible entry efficiency by facilitating cutting operations at fires, especially where roll-down security gates are present. These saws come in a variety of models. They require a metal cutting blade when cutting padlocks and/or roll-down security gates. The saw is usually run at low Rpm's until a groove is made in the metal, the power is then increased to maximum speed to complete the cut. More in Chapter 14, Roll-Down Security Gates.

## POWER TOOLS


**Cordless Drill:** Relatively new to the fire service, it operates off of a battery. A method of Thru-the-Lock entry which causes minimal damage to the door. It is a convenient tool for gaining entry into high-rise office buildings.

**Cordless Sawzall:** Relatively new to the fire service, it operates off of a battery. This tool is quickly becoming multi-versatile. Not only is it good for removing gates and bars, but it is also used in vehicle extrication.

## SPECIALTY TOOLS (Limited Use)

**Cutting Torch:** Many torches used today utilize Mapp Gas and Oxygen for cutting steel and iron for the purpose of entry or rescue. This is a safer alternative to Oxy-Acetylene for cutting gates and locks.

## SPECIALTY TOOLS (Limited Use)

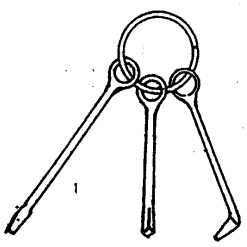
**Battering Ram**: There are quite a few models of this device used for breaching walls and forcing doors. It usually has handles on both sides and may be used by one or two firefighters. At one time this was used for forcible entry, today it has limited use in breaching walls.

## MODIFIED TOOLS

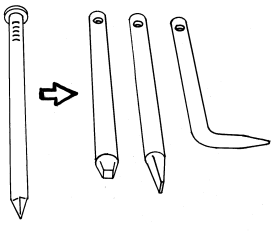
Standard tools and/or devices that have been modified for use in the fire service. Some of the many types out there are shown below:

**Channel Lock Pliers:** Modified commercial Channel Locks into two Key Tools for the Rim and Mortise type locks.

**Key Tools:** Eyebolts and standard 10-Penney nails modified as Key Tools.



**Eyebolts**



**10-Penny Nails**

## MODIFIED TOOLS

**Padlock Key Tool:** Field modified device using a threaded "eye" bolt welded to the "pin" from a previous pulled cylinder. Works mostly with the "American Series 2000" padlock.

**NOTE: This is not a complete list, as new tools and equipment are constantly being introduced.**

## Chapter 5

# TYPES OF LOCKS

## TYPES OF LOCKS

**KEY-IN-THE-KNOB LOCK -** As the name implies, the locking mechanism is part of the knob. These locks are found on both residential and commercial doors.

**TUBULAR DEAD BOLT -** This is a very popular locking device. It may be single or double key activated. It is a cross between a mortise lock, rim lock and a key-in-the-knob lock.

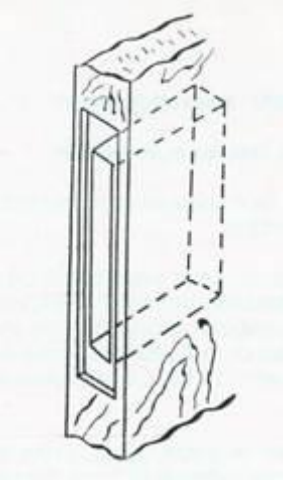
**RIM LOCKS** - These locks are usually installed as an **add-on lock.** They are installed on the **inside surface of the door (**with the cylinder extended through the door). Only the cylinder is visible from the outside of the door.

**Deadbolt** - Unlike a spring latch, this device must be manually thrown to engage the bolt into the keeper. With the bolt extended, this lock cannot be engaged by slamming the door.

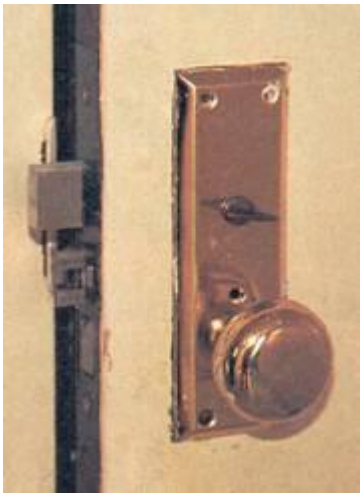
**Night Latch** - The latch is beveled to allow the door to be slammed shut. Some of these spring latches have an inside button to prevent the latch from returning within the lock, e.g. sliding open.

**Vertical Dead Bolt** (Segal Lock) - This rim lock has a bolt which drops down and through the keeper. This device must also be manually engaged. It is a "jimmy" proof lock.

**MORTISE LOCKS** - Are designed and manufactured to fit into a cavity in the edge of either a metal or solid wood door. They have a solid, threaded key cylinder, which is secured in place by set-screws. The two most common types are; Mortise/Latch Key and Mortise/Door Knob (see below).

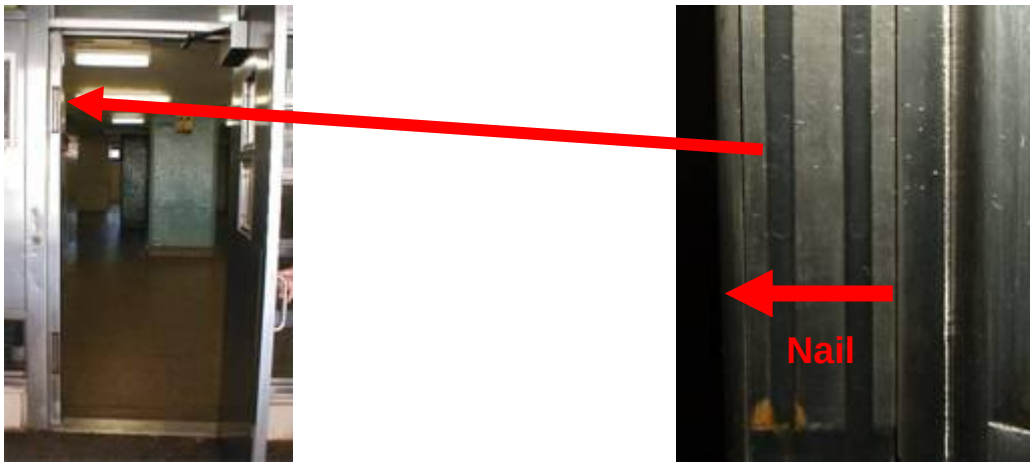


**DEAD BOLT AND LATCH** - One of the most popular locks in use today. It contains both a latch and a bolt in a single unit. It is distinguishable by the proximity of the lock cylinder and a door knob or latchkey. Below are examples of this type of lock.



**Mortise / Latch Key** **Deadbolt And Latch** **Mortise / Door Knob**

**MAGNETIC LOCK** – A relatively new locking device that has been incorporated into occupancies for added security.




**Note: Placing a common 8-10 penny nail over the magnet will prevent the door from re-locking.**

# New York City
# Fire Department

# FORCIBLE ENTRY
# REFERENCE GUIDE

# TECHNIQUES AND PROCEDURES