

**Title: Know Your Tools: Hydra-Ram**

Instructor: Danny Braitsch

Time: 1 hour

Equipment:

PowerPoint Presentation: **Know Your Tools: Hydra-Ram**

Hydra-Ram and accompanying equipment

Forcible entry prop door or other available and applicable training tool.

Enabling Objectives:

- At the conclusion of instruction, the student should be able to understand the history of the Hydra-Ram and the justification for and importance of its development.
- At the conclusion of instruction, the student should be able to identify the basic components of the Hydra-Ram and be able to explain the differences in specifications between the two versions of the Hydra-Ram.
- At the conclusion of instruction, the student should be able to determine the appropriate situations for use and application of the Hydra-Ram.
- At the conclusion of instruction, the student should be able to explain how to properly operate the Hydra-Ram.
- At the conclusion of instruction, the student should be able to demonstrate proper application and operation of the Hydra-Ram on a forcible entry prop door or other available and applicable training tool.

Overview:

- I. Hydra-Ram and Its History
- II. Hydra-Ram Specifications
- III. Parts and Components of the Hydra-Ram
- IV. Uses for the Hydra-Ram
- V. Operation of the Hydra-Ram
- VI. Accompanying Equipment
- VII. Maintenance and Care Instructions
- VIII. Conclusion
  
- IX. Training Exercise

Lesson Plan:

- I. Hydra-Ram and Its History

- A. Rabbit-Tool

1. Prior to the 1990s, a forcible entry tool was created and named the “Rabbit-Tool”
2. The Rabbit-Tool is a two-part forcible entry tool that consists of spreaders connected to a hydraulic pump by a length of hose containing hydraulic fluid.
3. The Rabbit-Tool requires two individuals for use; one to hold the spreaders in proper position, the other to pump the tool.

## B. Fire Hooks Unlimited

1. Around 1990, two FDNY firefighters, Capt. Robert Farrell (owner of Fire Hooks Unlimited) and Ron Johnson, seeing a need for a forcible entry tool that only requires one person, developed the plans for the first Hydra-Ram.
2. Capt. Robert Farrell is founder and owner of Fire Hooks Unlimited, the leading manufacturer of fire hooks, fire tools, and fire equipment. Hydra-Ram is copyrighted and owned by Fire Hooks Unlimited.
  - a. There are two versions of the Hydra-Ram
    - i. Hydra-Ram
    - ii. Hydra-Ram II
3. Fire Hooks Unlimited website provides a list of approved distributors from which the Hydra-Ram (or Hydra-Ram II) may be purchased.

## II. Hydra-Ram Specifications

### A. Hydra-Ram

1. Weight: Approx. 12-lbs.
2. Length: 13-in.
3. Spreading Distance: 4-in.

### B. Hydra-Ram II

1. Weight: Approx. 13-lbs.
2. Length: 15-in.
3. Spreading Distance: 6-in.

C. Both models can exert about 10,000-lbs of spreading force.

D. There are very few visual differences between the two products. Know your tools, know their abilities.

## III. Parts and Components





B.

C. The fluid within the hydraulics is not typical hydraulic fluid, as hydraulic fluid can irritate and injure skin.

1. Propylene Glycol is the fluid used in the device. It is non-toxic, non-flammable, and non-freezing.
2. This fluid should never require replacement. Monitor for leaks.

#### IV. Uses for the Hydra-Ram

- A. Meant for use on inward-swinging metal frame doors, similar to those frequently found in garden-style apartments and hotel rooms.
- B. Use of the Hydra-Ram on a wooden door frame may be successful, but it's also likely that the tool will separate the wooden doorstop from the rest of the jamb, making ongoing efforts more difficult.
- C. Has been used with success to gap the hood/trunk of a vehicle in order to make access to apply water or other extinguishing agents.
- D. Lightweight, able to be used by a single individual. Even works underwater.
- E. Are there other ways you have seen the Hydra-Ram safely and successfully used to force entry/gain access?

#### V. Operation of the Hydra-Ram

- A. Try before you pry.
- B. Make an initial gap between door and the doorstop.
  1. This may simply involve applying pressure to the door or may require making initial purchase with a halligan.
- C. Set the tips/jaws within the gap made. Remove the pump handle lock and allow the handle to extend to its 45° angle open position, charging the cylinder.
- D. Once the cylinder is charged, begin pumping the handle, allowing full extension of the handle with each pump while maintaining placement of the jaws end between the door and the frame/doorstop.

1. The amount of distance the jaws off the Hydra-Ram open depends on the amount of force being overcome by the tool
  - a. For pressure between 0 to 400-lbs., each pump extends the working-end piston approximately  $\frac{3}{4}$ -in per pump.
  - b. Increases in force may decrease the extension that each pump generates to anywhere between  $\frac{1}{4}$ -in and  $\frac{1}{8}$ -in.
- E. Full extension should result in the successful opening of the door.
  1. If the door is **not** successfully forced with the first full extension, use a separate tool (wedge or chock) to hold the purchase that has been made. Use the release valve to close the Hydra-Ram back to its closed position and resituate the Hydra-Ram in a way that will continue to create distance between the door and its doorstep/the lock. Continue to pump to extend the device until the door is forced.
- F. Remember to control the door.**
- G. To close the Hydra-Ram and return it to its stored position, close and lock the handle, depress the release valve, and apply gentle pressure to the end of the device until the tips are in-line.

## VI. Accompanying Equipment

- A. Per manufacturer specifications, the Hydra-Ram is **not** designed to be struck by the blunt end of an axe or by a maul/sledgehammer.
- B. Appropriate Accompanying Equipment
  1. Wedges (to maintain gaps)
  2. Rubber mallet
  3. Carrying case

## VII. Maintenance and Care Instructions

- A. Clean and lubricate the Hydra-Ram after each use
  1. Cleaning
    - a. Wipe visible debris from the Hydra-Ram or blow off with air gun.
    - b. If necessary, the Hydra-Ram may be washed in soapy water.
    - c. Dry fully and apply lubricant after washing.
  2. Lubrication
    - a. Extend the working-end piston fully, wipe clean with a rag and apply 3-in-1 oil. Retract and extend the piston several times after oiling to evenly distribute the oil.
    - b. Also apply oil to the control-arm piston.

- B. Manufacturer recommends routine exercise of the Hydra-Ram in order to avoid seals drying and the tool losing its charge.
  - 1. This requires operating the device under load.
  - 2. A common suggestion is to place the Hydra-Ram under load once weekly during weekly apparatus checks.
    - a. Utilize a large non-stationary object around the firehouse, such as an outdoor dumpster, place the jaws beneath and pump the handle until the working-end is fully extended.
  - 3. It is not recommended to routinely operate the Hydra-Ram without place it under load. When routinely operated not under load, seals can dry out and subsequently crack, causing fluid to leak.
- C. Store Hydra-Ram in its storage case and in closed position when not in use.
- D. Take care to ensure that the Hydra-Ram is not kept in a compartment of the apparatus in which heat may come in contact with the tool.

## VIII. Conclusion

- A. “If you don’t know how to use the irons, don’t grab the Ram.”- Capt. Bob Morris, FDNY Rescue Co. 1
  - 1. Develop a solid foundation of forcible entry basic techniques/tactics and build from that foundation.
  - 2. If one attempted method forcible entry fails, there should be a host of other possible options in your arsenal.
  - 3. The Hydra-Ram is intended only to supplement conventional forcible entry methods, not replace them.
- B. After review and instruction, students should be able to:
  - 1. Understand the history of the Hydra-Ram and the justification for and importance of its development.
  - 2. Identify the basic components of the Hydra-Ram and be able to explain the differences in specifications between the two versions of the Hydra-Ram.
  - 3. Determine the appropriate situations for use and application of the Hydra-Ram.
  - 4. Explain how to properly operate the Hydra-Ram.
  - 5. Demonstrate proper application and operation of the Hydra-Ram on a forcible entry prop door or other available and applicable training tool.

## Training Exercise

Crews should take turns getting hands-on experience with the Hydra-Ram, identifying components, inspecting the device, and operating and exercising the tool under load.

If available, crews should utilize the Hydra-Ram, applicable accompanying equipment, and a training door prop or any other available training option to demonstrate proper operation of the Hydra-Ram in forcing entry.

After training, ensure crew members complete proper cleaning and lubrication of the Hydra-Ram.

## References

Colarusso, Donald (UNK). *The man behind the tools: Capt. Robert Farrell, Ladder Co. 31, FDNY.*

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