

## Lamethrower Tactical Fire Extinguisher

Yunxiao Liu  
liuy8@my.erau.edu

Follow this and additional works at: <https://commons.erau.edu/asee-edgd>

---

Liu, Yunxiao, "Lamethrower Tactical Fire Extinguisher" (2016). *ASEE EDGD Midyear Conference*. 6.  
<https://commons.erau.edu/asee-edgd/conference70/posters-2016/6>

This Event is brought to you for free and open access by the ASEE EDGD Annual Conference at Scholarly Commons. It has been accepted for inclusion in ASEE EDGD Midyear Conference by an authorized administrator of Scholarly Commons. For more information, please contact [commons@erau.edu](mailto:commons@erau.edu).



LAMETHROWER

# LAMETHROWER

TACTICAL FIRE EXTINGUISHER  
SAVE TIME, SAVE LIVES

YUN LIU & DAVID CICOTTE  
AEROSPACE ENGINEERING  
TEAM ANTI-FLAMMERWAFFEN  
EGR120-4, EMBRY-RIDDLE  
DAYTONA BEACH, FL

## ABSTRACT

Normal fire extinguishers are inaccurate because they are fired from a hip position. They are also slow to use due to its complicated design. The LAMETHROWER is both fast and accurate, thanks to its rifle-like inspiration.

Under stressful emergency conditions, it can be hard to use a fire extinguisher because of the lengthy process required to prime the fire extinguisher. The LAMETHROWER fixes these flaws by making a system that is fast and instinctive to use.

Fire extinguisher manufacturers recommend users to spray in a sideways sweeping pattern. This is inefficient and wasteful because it uses much more fire retardant material than necessary. The LAMETHROWER fixes this by having a design that is easier to aim.

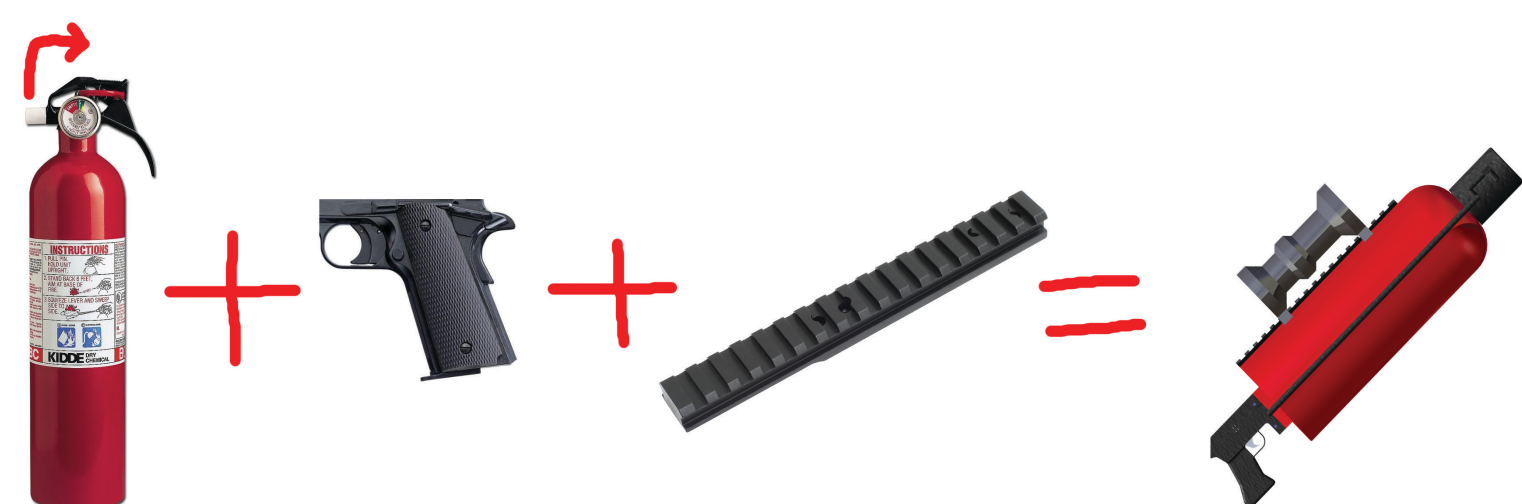
## INTRODUCTION

The LAMETHROWER is a modified fire extinguisher.

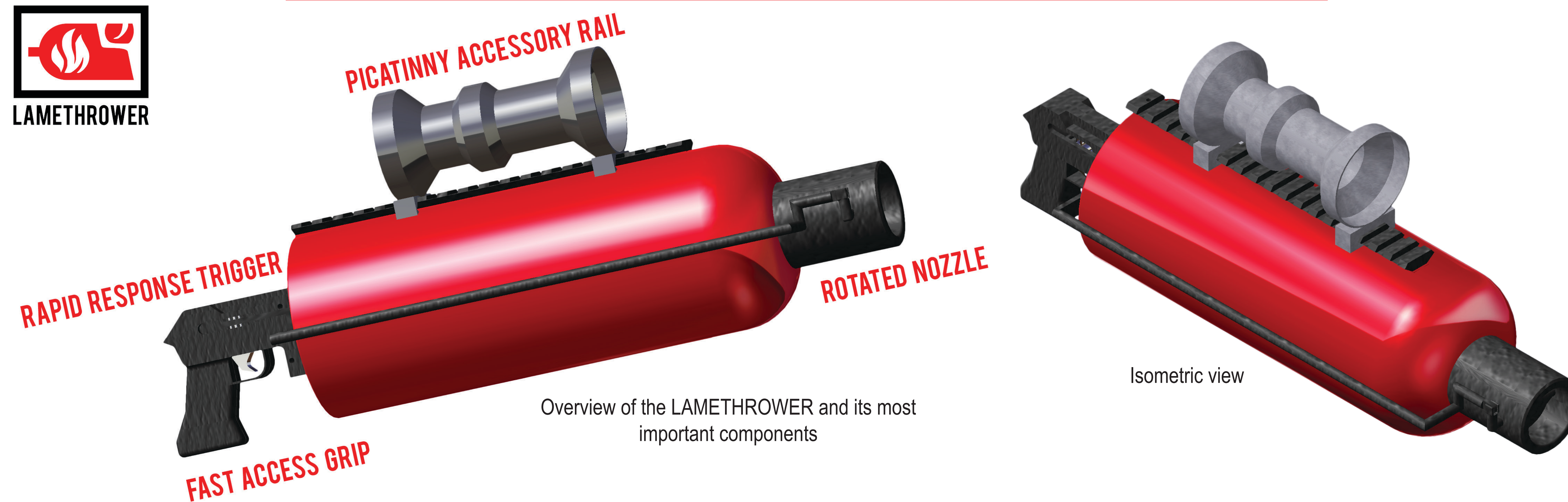
1. The nozzle is rotated 90° so that the spray of fire retardant material goes in a direction that is coincident to the central axis of the pressurized cylinder.

2. A pistol-style grip is added to facilitate carrying and aiming.

3. A Picatinny rail is added so accessories can be mounted to the LAMETHROWER.

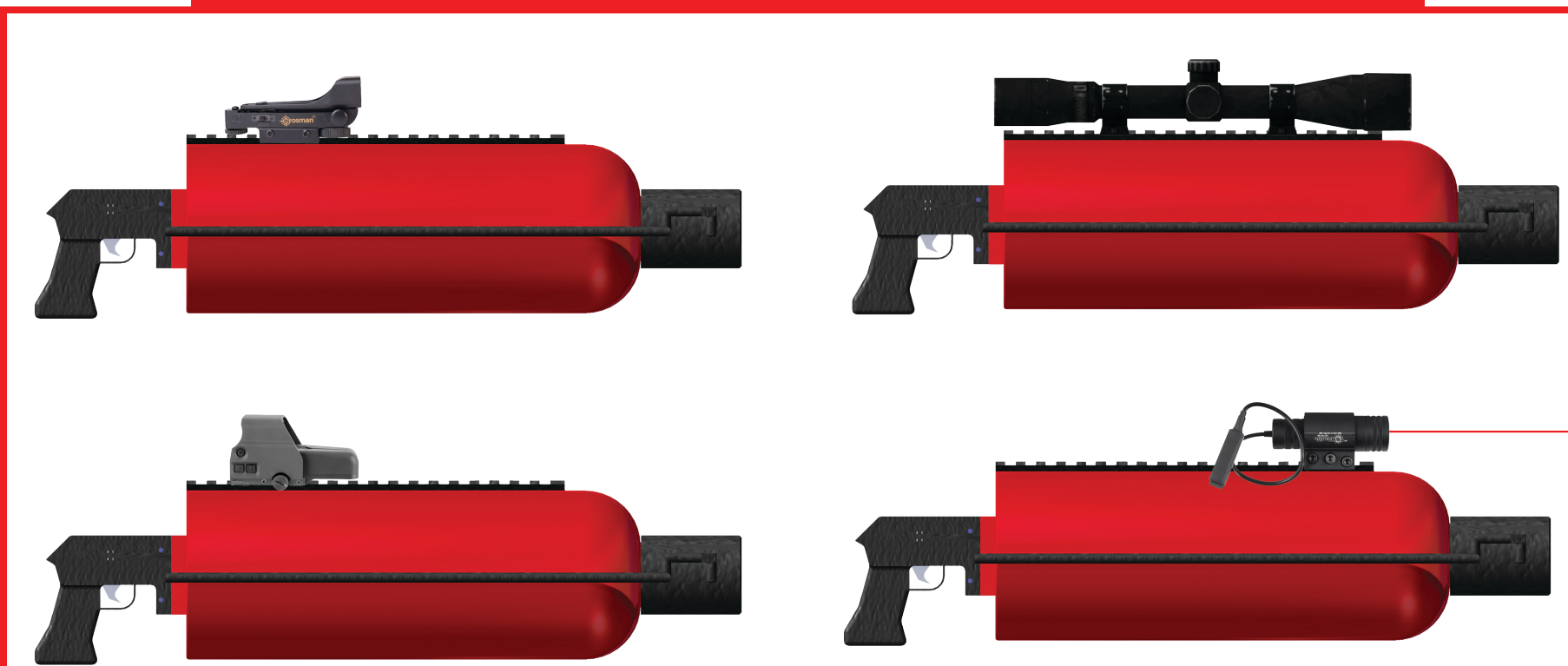


## PRODUCT OVERVIEW



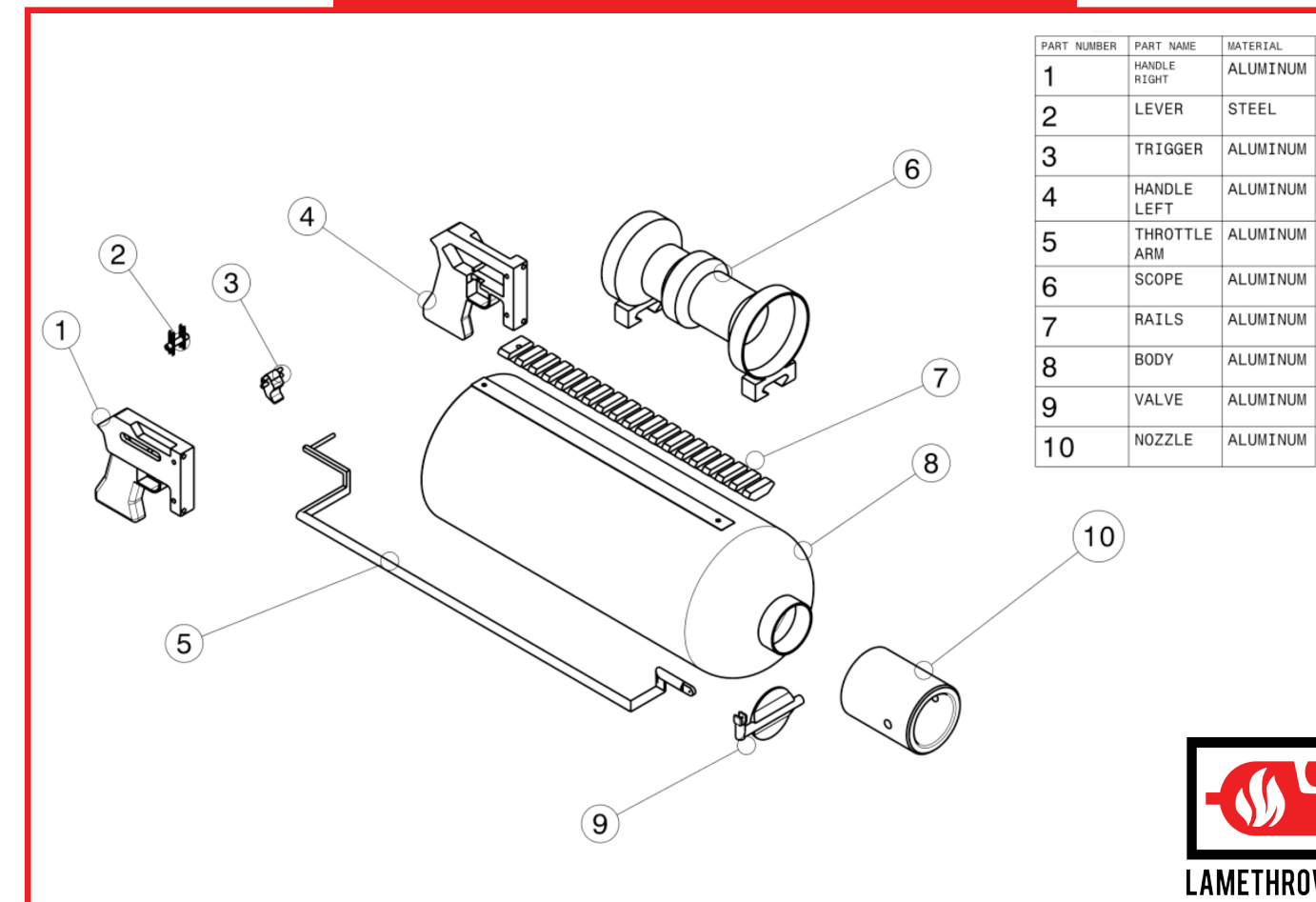
Overview of the LAMETHROWER and its most important components

### MODULAR RAIL SYSTEM



The LAMETHROWER attachment system is versatile and accepts all standardized Picatinny rails.

### DIAGRAM



### COST

| Part Groups            | Cost        |
|------------------------|-------------|
| Fire Extinguisher Body | \$20        |
| Picatinny Rails        | \$12        |
| Pistol Grip            | \$11        |
| Trigger Assembly       | \$4         |
| <b>Total</b>           | <b>\$47</b> |

The LAMETHROWER looks expensive, but due to its high efficiency, it can perform on the same level of larger fire extinguishers, while simultaneously saving costs on fire extinguisher recharges.

## BAD



- FIRED FROM HIP
- INACCURATE/INEFFICIENT
- LENGTHY SETUP TIME
- UNEVEN WEIGHT DISTRIBUTION

## GOOD



- FIRED FROM SHOULDER
- ACCURATE/EFFICIENT
- RAPID SETUP TIME
- EVEN WEIGHT DISTRIBUTION

## DESIGN

The LAMETHROWER adopts a rifle-style position for use. This position is fast, accurate, agile, and versatile. Typical fire extinguishers are held close to the ground which makes it difficult to extinguish elevated fires, like on countertops, car engine compartments, or workbenches. The rifle carry position also makes it easier for the user of the LAMETHROWER to move around.

The LAMETHROWER's simple operation makes it fast and intuitive for use in fire emergencies. Because the LAMETHROWER is much more instinctive, users can react to fires much faster than with a typical fire extinguisher.

Having the LAMETHROWER in a higher position brings the device closer to eye level which facilitates easy and accurate aiming. Targeting fires at their sources increases fire extinguishing efficiency.

The industry standard Picatinny rail makes it possible to mount any type of optics to the LAMETHROWER to help aim in difficult scenarios.

The LAMETHROWER is almost entirely constructed out of aluminum for weight, strength, durability, and sustainability reasons. Aluminum is relatively easy to manufacture and is easily recyclable.

## CONCLUSION

The LAMETHROWER is a revolutionary redesign of the ordinary, modern day fire extinguisher. Ease of use and speed of use has been increased. Accuracy levels never seen before in handheld fire extinguishing are now possible. The LAMETHROWER allows for much more rapid and effective life saving measures.

Don't fight fire with fire.

Fight fire with LAMETHROWER.

