

Ultimate Ballistics Box Torso Simulator

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BACKGROUND

- Patent: US 8,215,165 B2
- Whitetail deer, elk, grizzly bear, eland, Cape buffalo
- Simulates torso for ballistics testing
- 4 layers of anatomical simulation to represent entire torso: Skin/hide, Muscle, Bone, Internal organs
- Current products on the market only simulate muscle
- Project scope is Cape buffalo
- Engineering Specifications:
 - Length of frame must be 36" +/- 1"
 - Frame setup time must be less than 15 minutes
 - Each insert material must have similar mechanical properties to their organic counterparts
 - Obtain a \$50 minimum profit per unit sold



PROTOTYPE



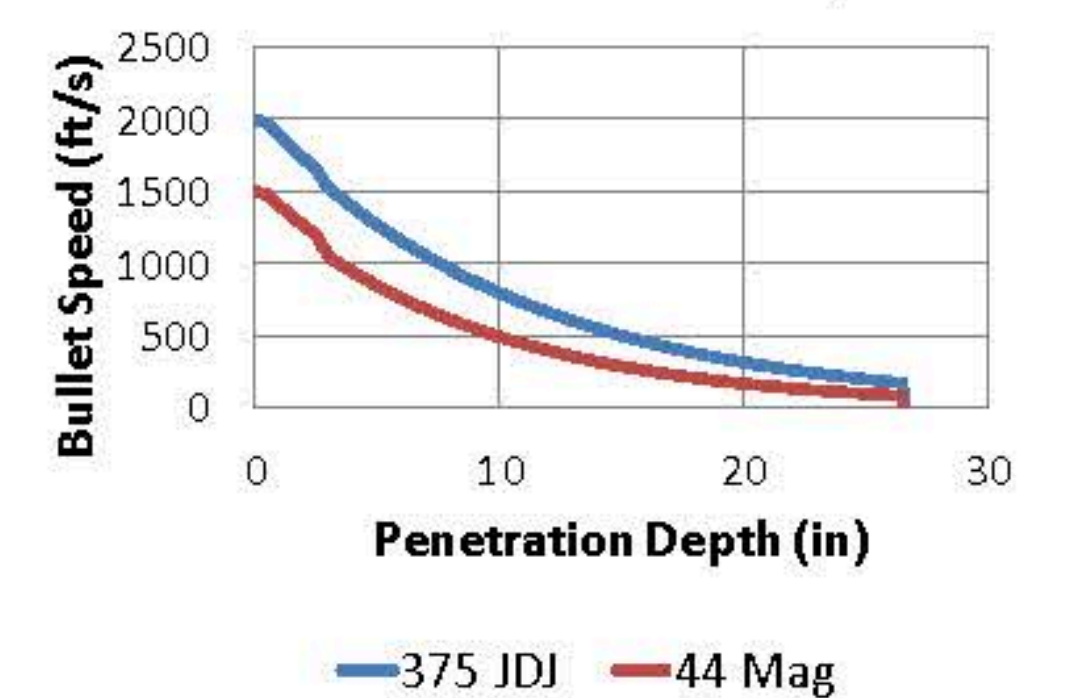
BULLET PENETRATION



Testing Results

- Prototype was tested from 50 yards using 375 JDJ and 44 Mag bullets
- Full penetration occurred in 66% of the shots
- Results were expected due to the depth of water available
- Testing the validity of squeeze pouches as an alternative for internal organs was a priority
- Squeeze pouches were validated as a superior option to previously used vacuum sealed bags
- Cardboard was tested as an alternative to the aluminum frame in a single use atmosphere
- Cardboard proved to be a viable alternative

Theoretical Penetration Depth



SAFETY & ERGONOMICS

General Firearm Safety:

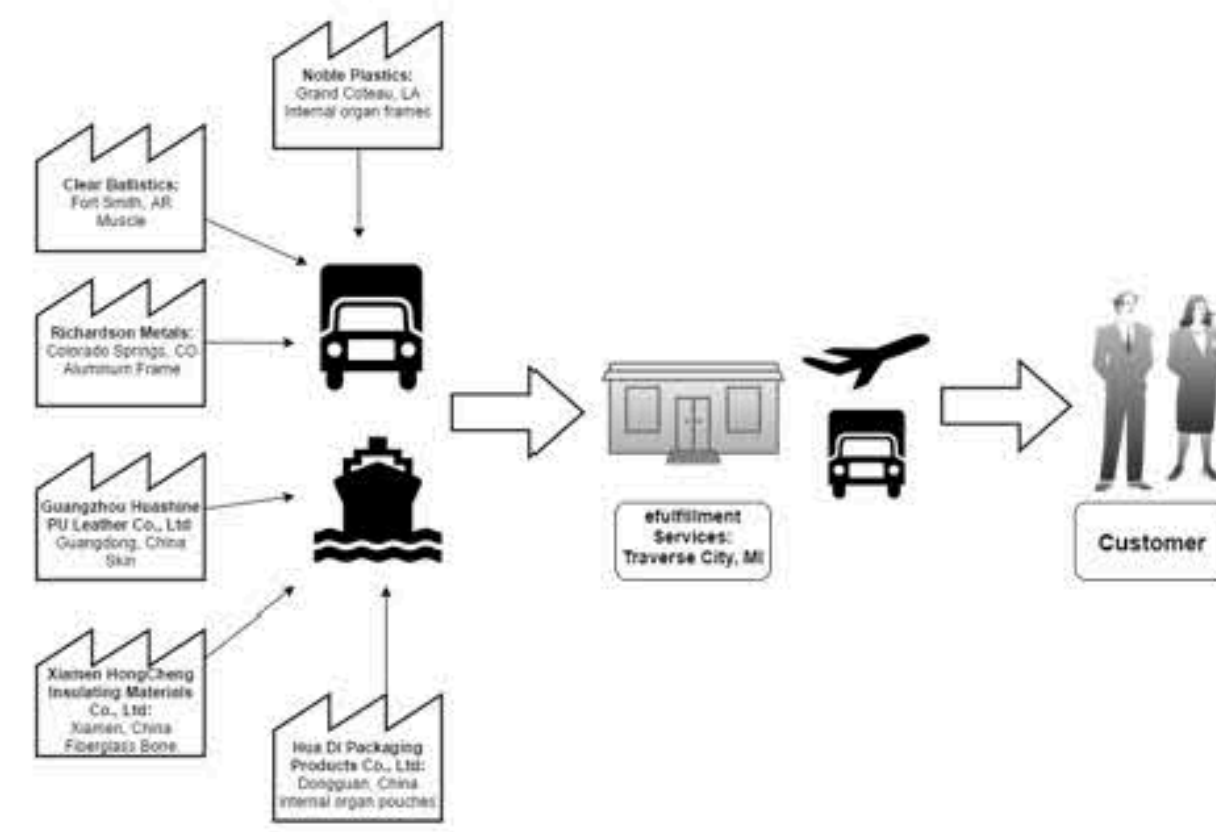
- Keep the gun pointed in a safe direction
- Keep your finger off the trigger until ready to shoot
- Keep the gun unloaded until ready to use
- Know your target and what's beyond
- Learn the mechanical operations of the gun before shooting
- Use only the correct ammunition for your gun
- Wear eye and ear protection
- Never use alcohol or drugs of any kind before or while shooting
- Never rely on the gun's "safety" setting
- Never look down the barrel of the gun
- Never point the gun at something you are not prepared to destroy
- Store guns so they are not accessible to unauthorized persons

Push/Pull/Carry Specifications:

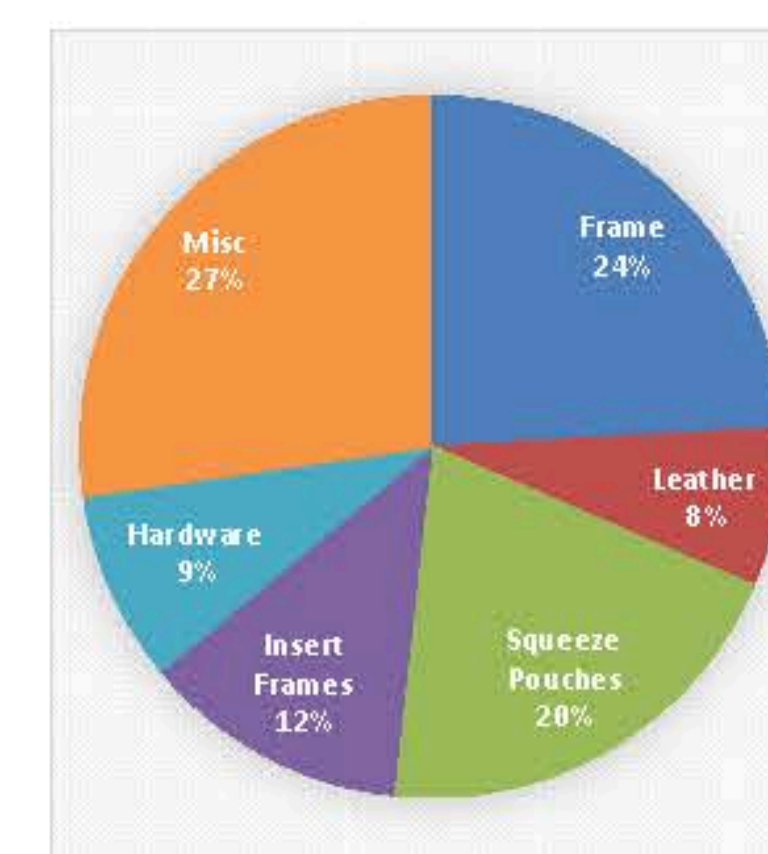
TYPE OF MOVEMENT	GENDER	HEIGHT OF HANDS	DISTANCE OF MOVEMENT	FREQUENCY OF MOVEMENT	SUGGESTED MAX INITIAL FORCE EXERTED	SUGGESTED MAX SUSTAINED FORCE EXERTED	MAX WEIGHT
Push	Male	25 inches	150 feet	1 push/30 minutes	46 lb	30 lb	
Push	Female	22 inches	150 feet	1 push/30 minutes	35 lb	17 lb	
Pull	Male	25 inches	150 feet	1 pull/30 minutes	55 lb	35 lb	
Pull	Female	22 inches	150 feet	1 pull/30 minutes	44 lb	17 lb	
Carry	Male	31 inches	7 feet	1 carry/30 minutes			79 lb
Carry	Female	28 inches	7 feet	1 carry/30 minutes			41 lb

Upon unload of UBB from vehicle, the user would carry the UBB roughly 7ft and push or pull the UBB 150ft out (to obtain 50yd shooting distance). To do so, the user would need to exert the above forces. The complete UBB package weighs 45lb. Thus, the UBB's weight is within +/- 10% of the suggested maximum carrying weight for females and well below the suggested maximum carrying weight for men.

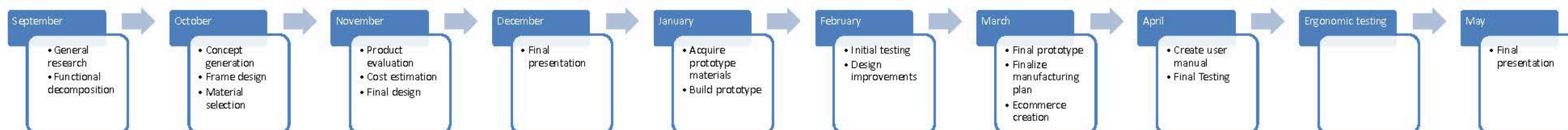
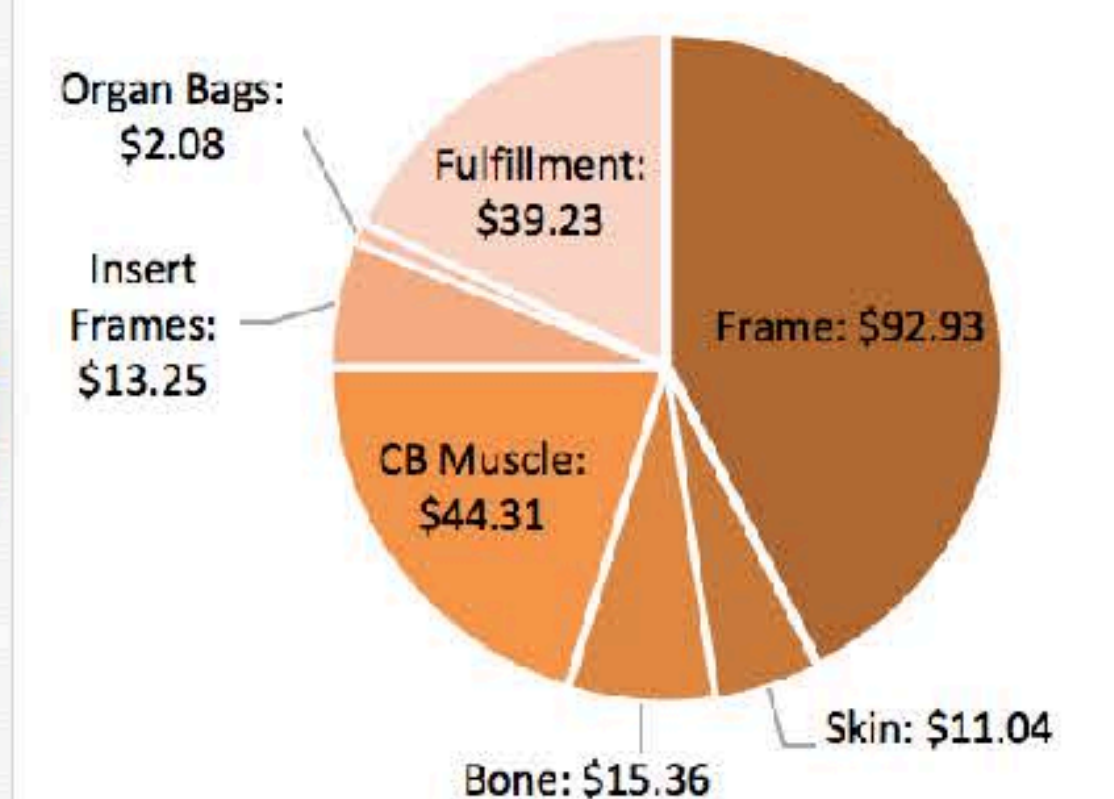
MANUFACTURING & ECOMMERCE



\$1000 prototype budget
\$326.47 used



Cape Buffalo Production Cost: \$223.70



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