CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J0205

Project Title
Need Ballistics

Abstract

Objectives/Goals
The object of this project was to determine whether or not the brand of 40 caliber ammunition affects the performance capabilities of the shot.

Methods/Materials
In this project the brands used were called Federal and Corbon. The ammunition was shot through three mediums 1.9 cm plywood which represents a wooden door, two pieces of twenty-guage steel which represent a car door, and saturated newspaper which is a tissue simulant. Each brand of ammunition was shot thirty times through each medium for a total of 180 shots. The performance of the shots was determined by the measurement of penetration, expansion, and weight retention.

Results
The average penetrations for federal were 26cm through plywood, 21cm through steel, and 15cm through newspaper.
The average penetrations for corbon were 23cm through plywood, 22cm through steel, and 16cm through newspaper.
The average expansions for federal were 1.5cm through plywood, 1.5cm through steel, 1.8cm through newspaper.
The average expansions for corbon were 1.8cm through plywood, 1.5cm through steel,and 1.9cm through newspaper.
The average weight retentions for federal were 9grams through plywood, 10 grams through steel, and 9 grams through newspaper.
The average weight retentions for corbon were 9 grams through plywood, 10 grams through steel, and 7 grams through newspaper.

Conclusions/Discussion
Out of all of the averages, corbon performed better on more occasiond than federal. The differences however, were extremely marginal. Therefore, both brands performe very well and one is not much better than the other.

Summary Statement
Does the brand of 40 caliber ammunition affect the perfomance capabilities of the shot?

Help Received
sgt. Van Duesen allowed me to use the sheriff's range to perform my tests;Trevor Bissonnnette gave me a gun handling and safety lesson