



# **.50 Caliber FSP Test**

**11 January 2008**

**Bastogne Manufacturing LLC**

**McMinnville, Tennessee**

# Executive Summary

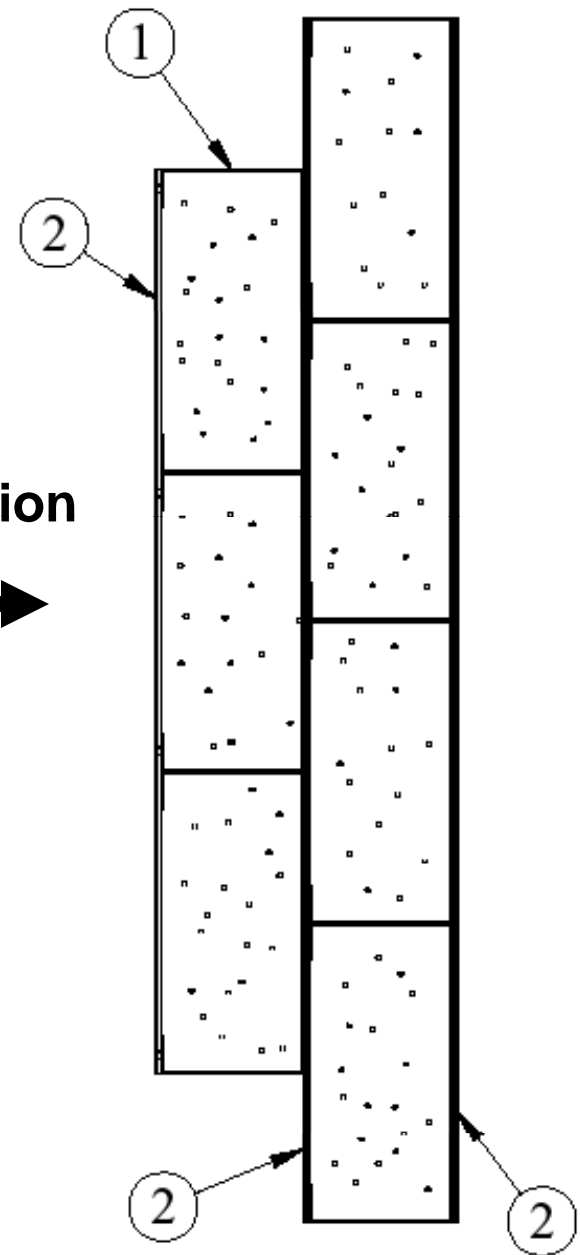
- Bastogne personnel conducted a rudimentary armor ballistics test following MIL-STD-662F as closely as possible. Using hand loaded .50 caliber shells with FSP's manufactured to MIL-DTL-46593B in a Browning .50 machinegun, we fired rounds into a sample section of our 8" wall. We understood that we could not attain laboratory conditions but wanted to approximate a lab test to get some idea of the wall's fragment resistance. The highest velocity FSP round we recorded was 4,100 feet per second, and it did not penetrate the wall. In fact all of the FSP's only penetrated into the first cavity and dented the interior wall. We fired a standard M2 ball ammo round into the wall. It penetrated into the second cavity but did not penetrate the back wall. Our conclusion is that the Bastogne 8" wall design shows significant resistance to fragments traveling at high velocity.

# Bastogne Test Wall

Two sand filled  
cavities 4 inches  
thick, 8 inches total  
wall thickness

Item Number	Material
1*	18 Ga. Almzd
2*	10 Ga HRP&O

**Bullet Direction**



# Test Range with Chronograph



# Aluminum Witness Panel on Backside



FSP striking outer panel; sand blow back as FSP enters 1<sup>st</sup> sand filled cavity



# FSP Entry Holes



# End View of Test Wall Section after Sand Emptied



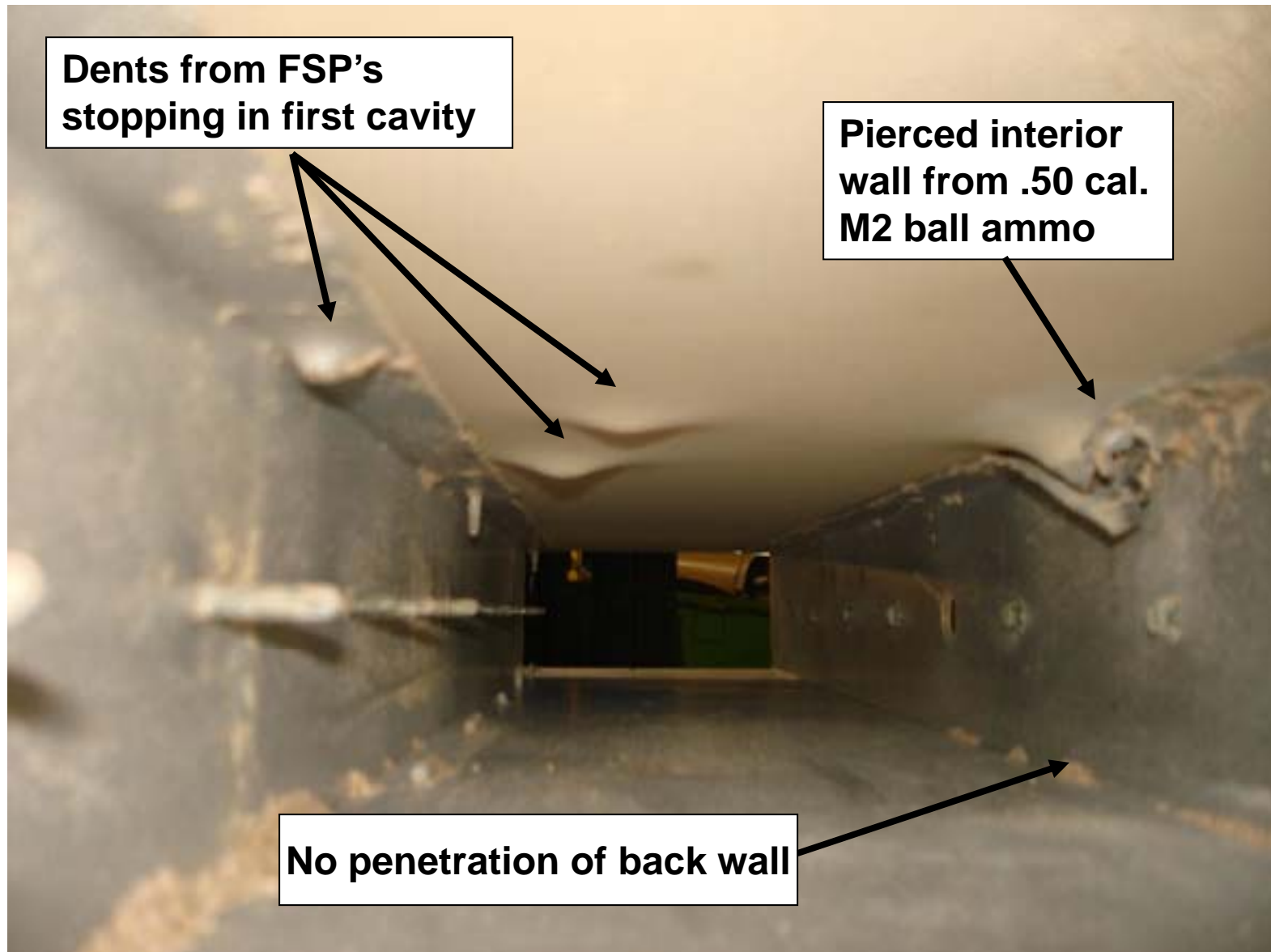
# Recovered FSP's and Bullet



FSP's

.50 cal. M2  
Ball Ammo

# Interior of second layer cavity



# Test Results

Location: Mountain Creek Firing Range, McMinnville, TN  
Date: 11 January 2008  
Temperature: 51 degrees F  
Time: 1:30 PM to 3:20 PM  
Gun: .50 Caliber Browning w/ 36" barrel  
Bullet type: FSP (Fragment Simulation Projectile)  
Powder: IMR 4895  
Chronograph: Oehler Proof Chronograph Model 35P  
Distance to target wall: 129" from muzzle  
Chronograph was located 40.5" from front of target wall  
FSP's at higher velocities dented interior wall but never penetrated back wall.  
.50 caliber M2 ball ammo bullet penetrated interior wall but stopped in second cavity.

Shot #1	150 grains - 3280 ft/sec	FPS stopped in first cavity, did not exit wall
Shot #2	160 grains - 3444 ft/sec	FPS stopped in first cavity, did not exit wall
Shot #3	170 grains - (chronograph error)	FPS stopped in first cavity, did not exit wall
Shot #4	170 grains - 3765 ft/sec	FPS stopped in first cavity, did not exit wall
Shot #5	180 grains - 3798 ft/sec	FPS stopped in first cavity, did not exit wall
Shot #6	190 grains - (chronograph error)	FPS stopped in first cavity, did not exit wall
Shot #7	190 grains - 4100 ft/sec	FPS stopped in first cavity, did not exit wall
Shot #8	200 grains - (chronograph error)	FPS stopped in first cavity, did not exit wall
Shot #9	M2 Ball Round - Military Issue - Lake City	Bullet stopped in second cavity, did not exit wall