

# ARL AIAD 2005

Cadet Dan Mahoney '06



# Agenda

- Original Plan
- Change of Plans
- The Range
- Analysis
- Officemates
- Questions

# Original Plan

- AIAD # 7753 “Weapons Effects in Urban Environments”
- Program was shot 2 weeks before I arrived
- Spent the first two days learning what goes on at the small caliber range

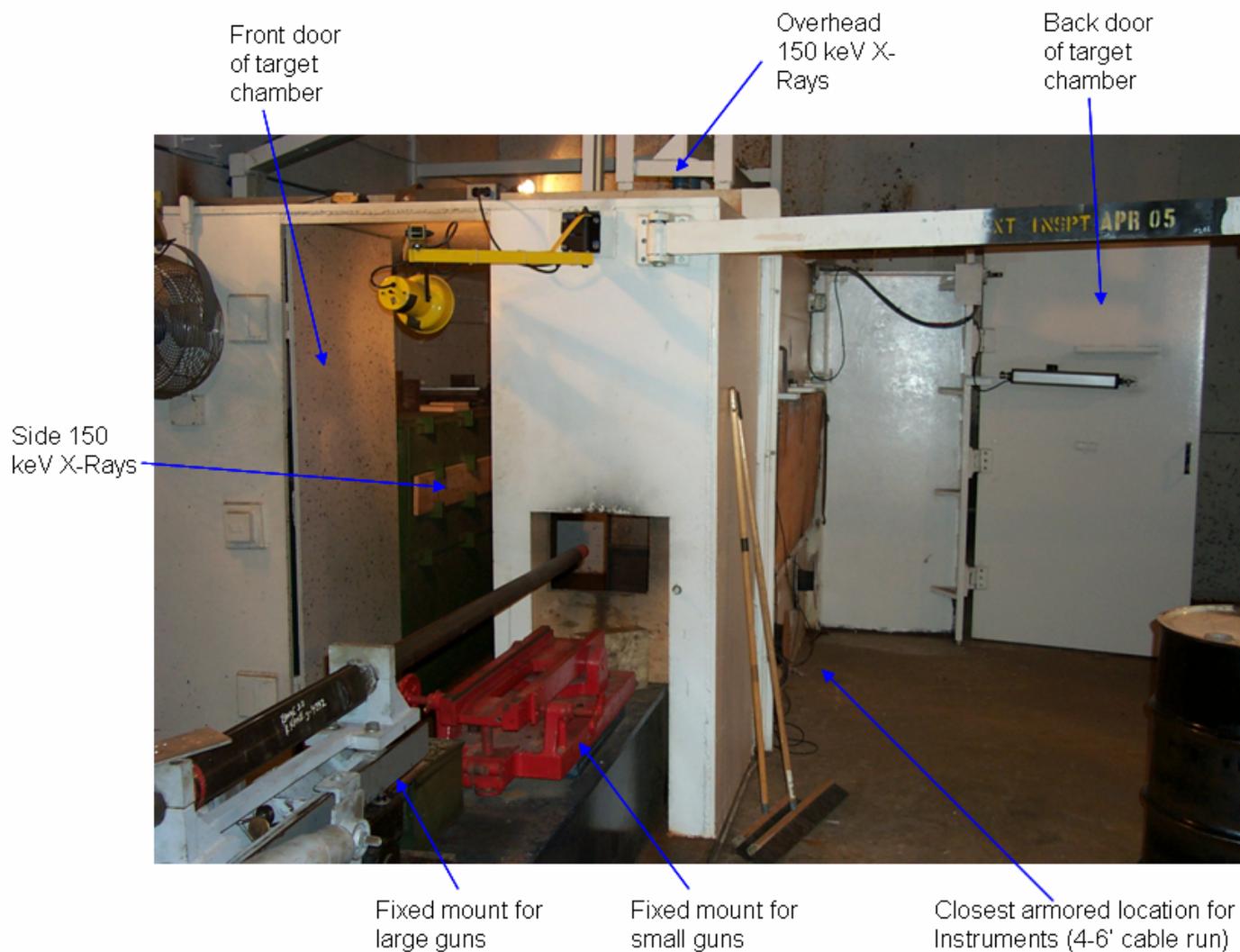


# Change of Plans

- Decided to send me to range 110
- Small arms range
- Would enable me to see testing and actual engineering in action

# The Range

VIEW FROM ENTRANCE OF FACILITY



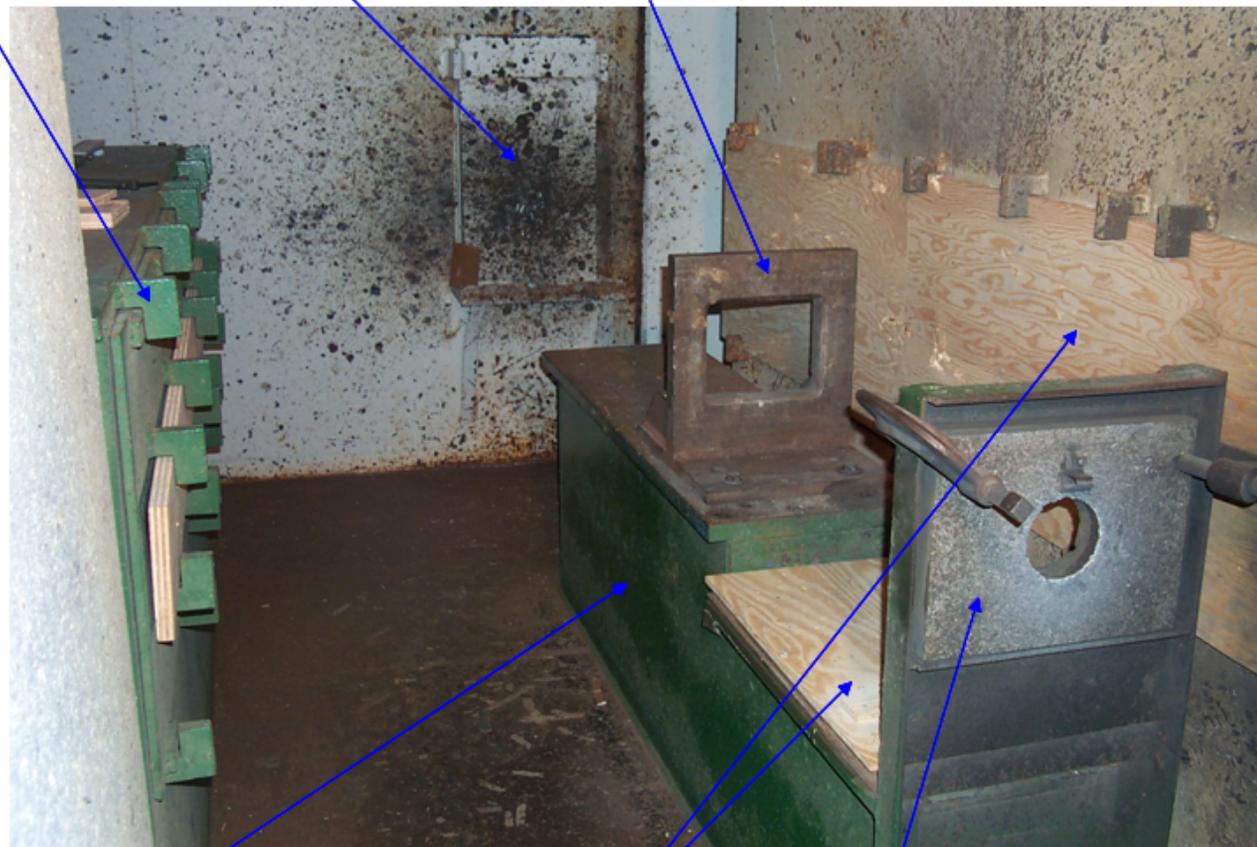
# The Range

VIEW FROM FRONT DOOR OF TARGET CHAMBER

Side 150  
keV X-Rays

Backstop

Target  
Stand



Target  
Table

X-Ray Film  
Locations

Break screen  
holder

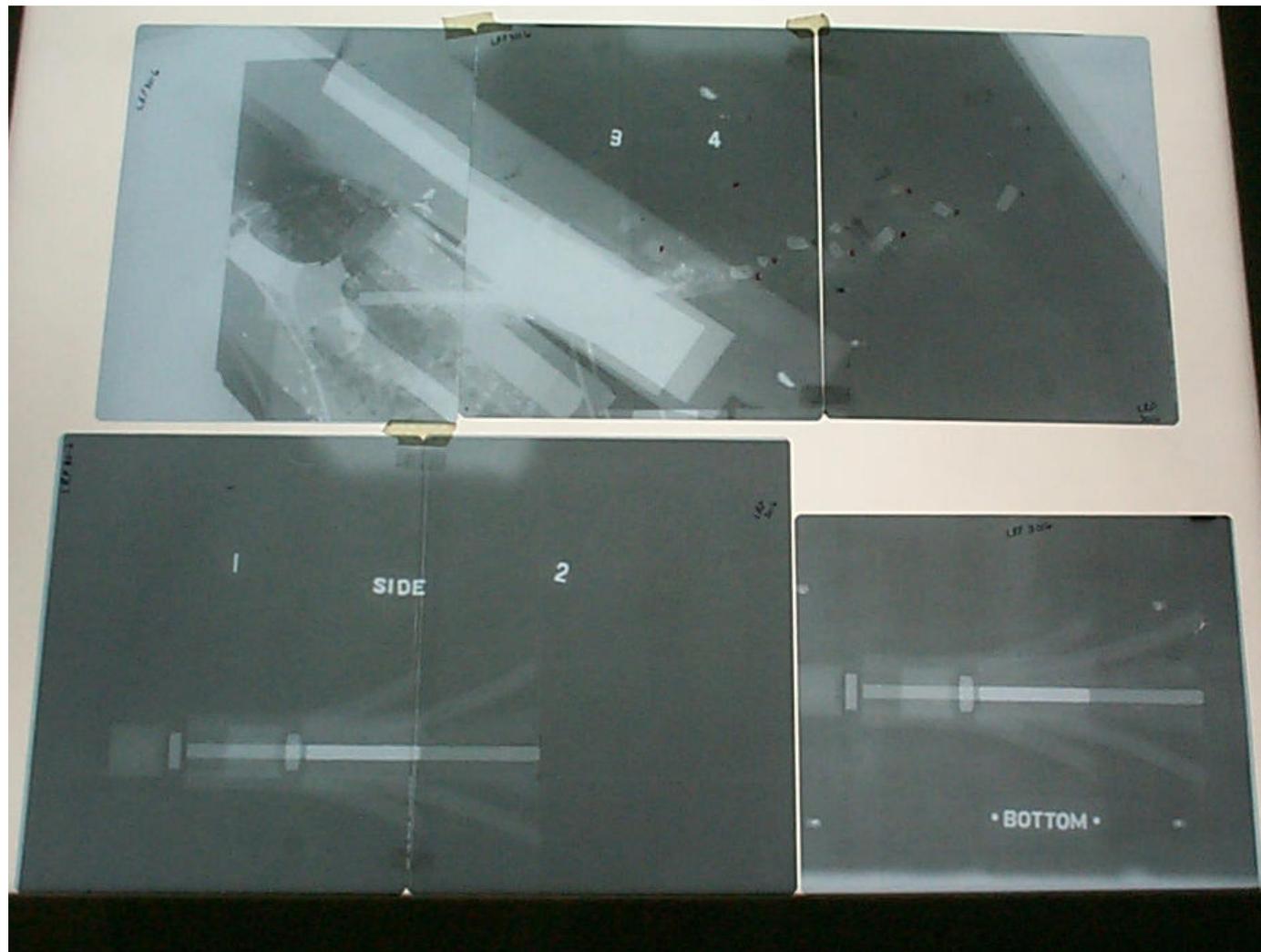
# The Range

- Helped to set up shots, mark targets, sweep up and collect “after armor debris” following each shot



- Hands on learning about what we were testing

# Analysis



# Analysis

- High speed photography captures penetrator in flight, as well as behind armor debris
- Techs mark the pieces of debris, and using flash timing for cameras, can calculate speed of fragments, pitch and yaw of penetrator

# Analysis

- In my last week, I polished penetrator samples in targets, and analyzed the shear bands using an electron microscope
- Made a “road map” for shear bands, grain boundaries, mushroom effect, self sharpening

# Officemates



John "Hollywood" Hogan  
(Former Artilleryman)



Hugh



Questions?