Accuracy Evaluation of the AC-130 Gunship

Gary Spradling
ASI Division of SRS Technologies
gspradling@fwb.asi.srs.com
850-862-4188
Aeronautical Systems Center, Strategic Planning (ASC/VXXP) was tasked in mid 1995 by USSOCOM to establish a combat accuracy baseline for the AC-130 gunship.

AFSOC agreed to provide training missions to accomplish this task.
Never Been Done Before – What is Truth

Need Benchmark for Comparison of Alternative Systems

Damage Potential Assessment
Data Collected

- Aircraft Parameters
- Crew Notes
- BDA Video
- Impact Locations
- Target Damage Assessment
- Target Video
Ground Rules

- Crew must be in combat dress less side arms
- Combat ready crew in each critical position
  - Pilot
  - Sensor operator
  - Fire control officer
Data Reduction

- BDA Video Freeze Frame Analysis
- Gun Plane Analysis
- Ground Plane Analysis
Measures of Accuracy

- **Circular Error Probable - CEP**
  The Number $D$ such that 50% of Miss Distances are Less Than $D$ and 50% are Greater Than $D$

- **Mean Radial Error - MRE**
  The Average Radial Miss Distance
Loadout

❖ Ammunition:
  • 20 - 105mm,
  • 52 - 40mm,
  • 500 - 25mm

❖ Aircraft/Sensors
  • AC-130H - LLLTV and IR
  • AC-130U - ALLTV, IR and Strike Radar
Analysis Base

- 55 Missions Flown
- 900+ 105mm Rounds Fired
- 2300+ 40mm Rounds Fired
- 5500+ 25mm Rounds Fired
Results

- Opened Opportunities for Combined Training on Army Ranges

- Established the Baseline to Measure Alternative Systems Against
Action Shots

• **Start**

• **Finish**