

Dugway Proving Ground



Dugway Proving Ground Combating WMD-Warfighter Panel Joint CBRN Conference 24 June 2010

Mission & Capabilities Overview

Mission/Vision Statement

Protecting the national interests through operating of the nation's premier chemical and biological proving ground by:

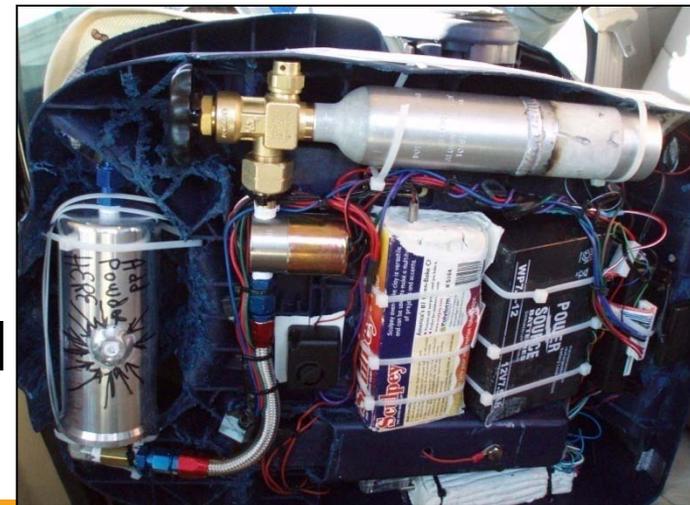
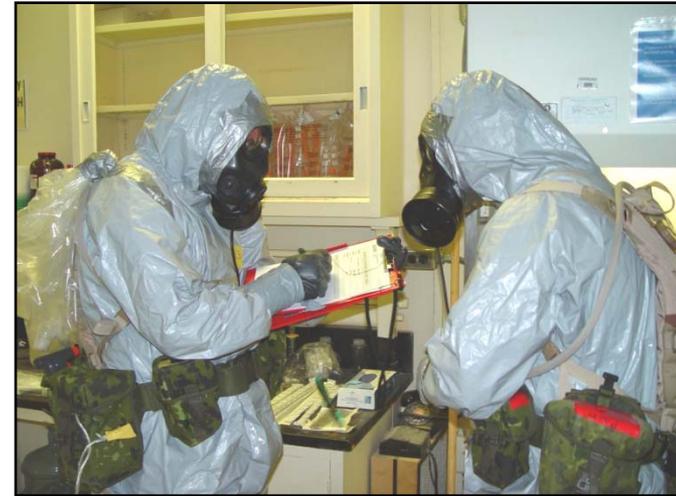
- Adherence to Army Values
- Conducting Developmental and operational testing, advanced C/B training & TTP development support, training, and operational assessments to the highest scientific and technical standards
- ACTD/ATD/JCTD T&E Support
- Reach-back Support to SOCOM
- Fostering environmental stewardship
- Providing garrison support to the mission, and
- Exceeding customer expectations

Rendering Danger From Chem/Bio Agents Irrelevant



Staff Capabilities

- Unique mix of operational and technical personnel
 - PhD. Microbiologists
 - PhD. Chemists
 - PhD. Engineers
 - Former TEU/EOD/SOF/MI
- Matrix Management teams
- Extensive cross-training.
- Focus on customer interface (End user)
- Specialize in advanced developmental and operational testing and evaluation, training, and exercises

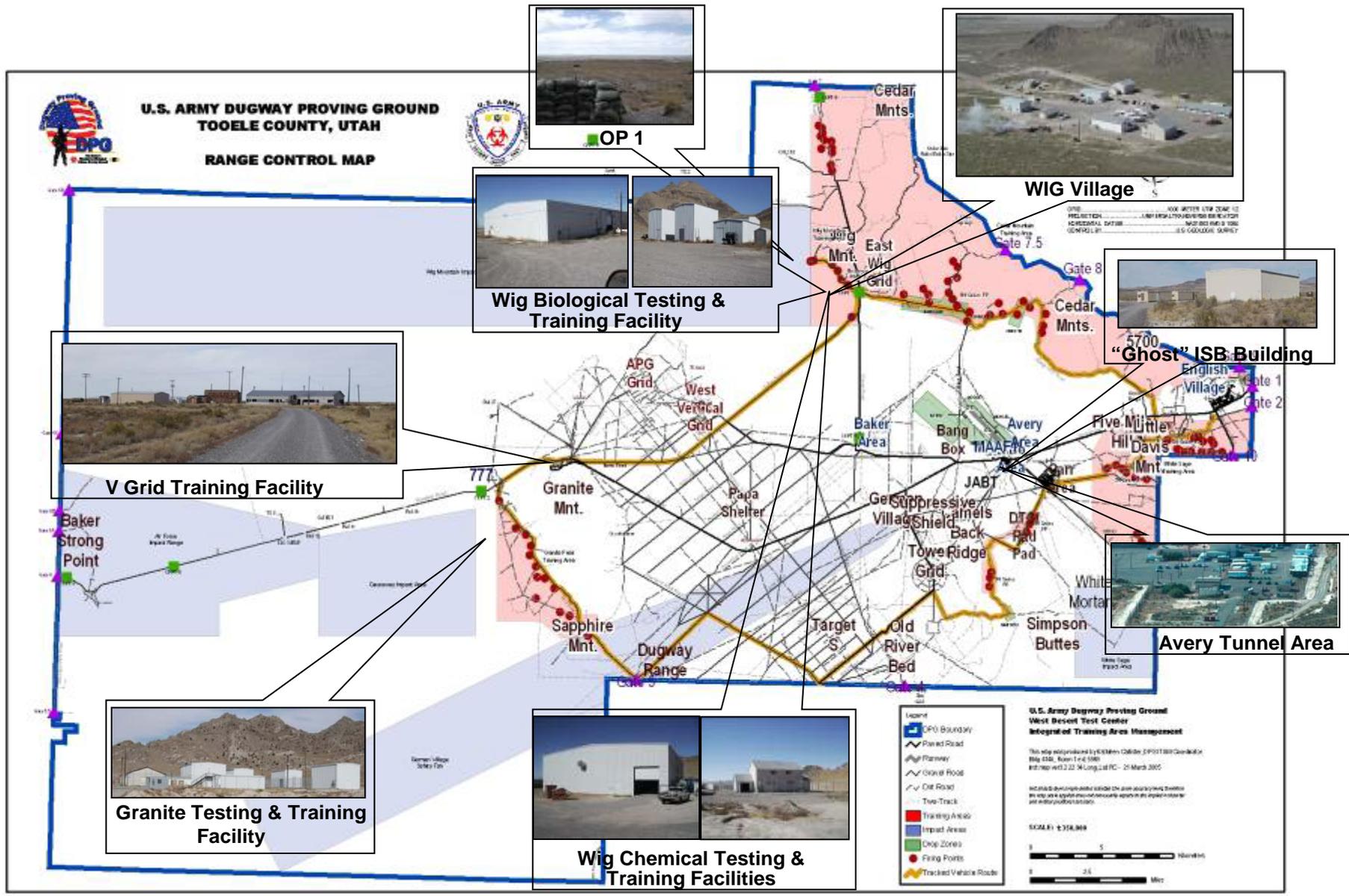


Facilities

- Multiple real-world test beds and training sites
- Multiple outdoor test and training ranges
- SPECAT Vaults
- SCIF with JWICS lines
- Classified (Secret) VTCs Suites



REAL-WORLD TESTING AND TRAINING BEDS



Test Infrastructure

Labs



Reginald Kendell Combined Chemical Test Facility



Kuddes Operations Center



Lothar Salomon Life Sciences Test Facility



Michael Army Airfield

Chambers



Melvin Bushnell Materiel Test Facility



Defensive Test Chamber



Combined Chemical Test Facility



Capabilities

- 35,000 square feet of multifunctional chemistry laboratories
- 47 agent certified fume hoods in 27 Surety-capable test suites
- Supports chamber and field testing of Chem-Bio defense systems
- Aerosol, vapor, and droplet testing with all chemical agents
- Support of Homeland Defense

Chemical Agents & Simulants

Agent

-G Agents
-VX
-H-Series
-Lewisite

Simulant

13 licensed
simulants



Life Sciences Test Facility

Capabilities

- 32,000 ft² of Multifunctional Biological Laboratories
- *Only U. S. Facility Equipped to Test with Aerosolized Biosafety Level 3 (BSL3) Agents*
- Nine BSL2/3 Containment Suites
- Aerosol testing with pathogens, toxins, and simulants
- Support Homeland Defense



Agents of Biological Origin & Simulants

Agent

Biosafety Level 1-3
- Bacteria
- Viruses
- Ricettsia
Biological toxins

Simulant

8 licensed simulants



Test Chambers

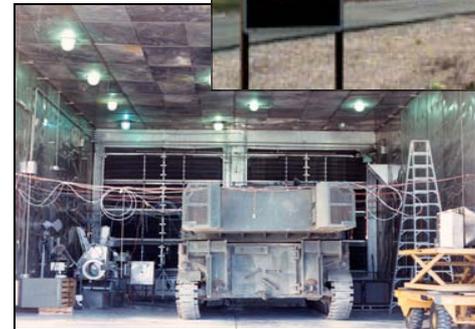
Material Test Facility

- Stainless Steel Chamber (30'x50'x50')
- Full environmental control



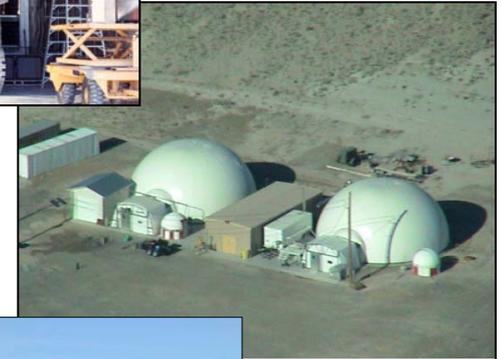
Defensive Test Chamber

- Certified for Chem-Bio simulants
- Man-in-simulant (MIST) testing



Bang Box

- Explosive material synthesis and testing
- Environmental characterization of explosive munitions



Joint Ambient Breeze Tunnel

- Simulant testing of Stand-off Chem-Bio Detectors



BANG BOX

- Explosive material synthesis and testing

- Peroxide Explosives Properties

- HMTD, TATP, DADP

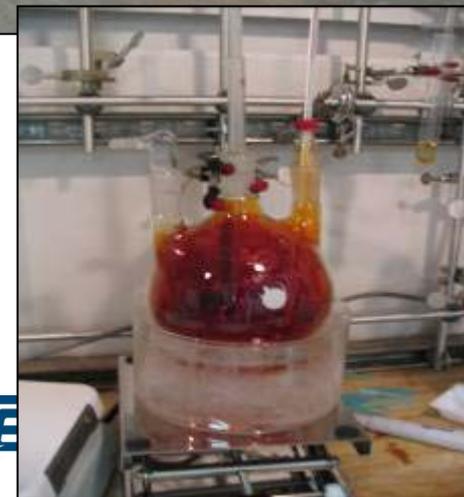
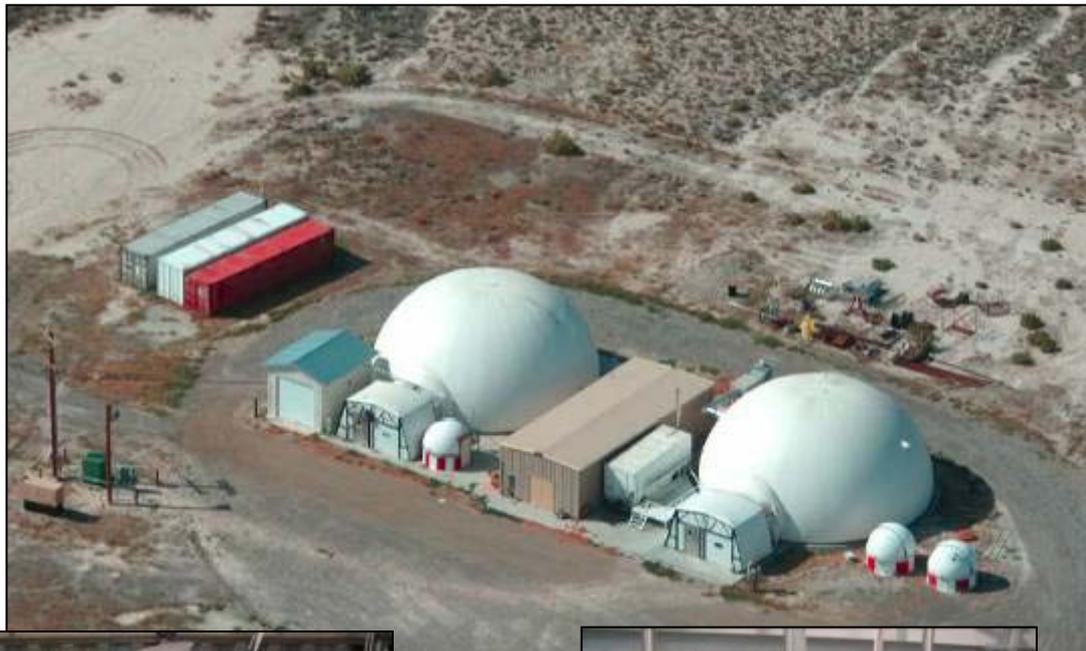
- Peroxide Explosives as Initiators

- TATP Synthesis

- HMTD Synthesis

- RDX Synthesis

- ANFO Mixture



MUSTANG VILLAGE



- Hotel, Post Office, Warehouse, Strip Mall, Office Building
- Remote Terrorist Encampment
- Validate Tactics, Techniques, and Procedures
- Combat Maneuver Area, Live Fire Authorized
- Full use of C/B Simulants
- Escape & Evasion Scenarios



Special Programs Division aFAST Biological Laboratory Trailer



- State of art forensic level detection of biological material
 - DNA Extraction, amplification and detection.
- Custom Built 50' van trailer w/4 slide out sections (2 per side) 940 Sq Ft.
- 208 VAC, 3 Phase, 200 AMP Service
 - On board 60 kW diesel Generator
- Waste water treatment system
 - Ozone gas/filtration treatment
 - Gray water re-use for lavatories
 - 50 State EPA legal over ground dumping per manufacturer
- Automated HVAC/Pressure System
 - BSL 2+/admin/Clean-room
- Collapsible "mud room"



SOCOM Support

- Reach-back
- Training
 - Chemical and Biological sampling, detection, decontamination, production, defeat
 - Explosive synthesis
 - Conventional training
- Testing
 - Technology development, TTP development



SOF/Conventional Training Support

- Conduct Air/Ground Deployment of Unit
- Conduct full SOF mission profiles
- Desert Warfare and live-fire ranges
- Land Navigation and Off-road Vehicle Mobility
- Unique Weapons Training Sites
- High Angle / Long Or Short Range Marksmanship
- Immediate Action Drills, React to IEDs
- HAHO, HALO jumps (9 drop zones)
- Close Air Support (CAS) ranges



Laboratory Training Programs

- Hands-on training with agents in Chemical & Biological laboratories
 - Detection of actual agents using units capabilities
 - Decontamination of actual agents using unit procedures
 - Confidence in working with hazardous materials



Field Training Activities

- Tailored to Unit Objectives
- Realistic Scenarios with role players
- Use of simulated CBW agents with unique disseminations
- Immediate feedback from SME's (Ph.D. Level)
- Interim After Action Reviews (AAR's) and Formal After Action Reviews
 - Exercise Video
 - SME input
- Results are confidential





- Advanced • Hands-On
- Real Agents and Simulants
- Realistic Scenarios

Course Objectives

- Provide a hands-on training environment focused on chemical and biological detection, signature, and sampling, for first responders.
- Enhance students' readiness to respond to domestic chemical or biological terrorist attack.
- Provide realistic practical exercises to test tactical skills in the detection, forensic sampling, and packaging of chemical/biological agents



Course Description

The Advanced Chemical and Biological Integrated Response Course (ACBIRC) is designed to provide students with hands-on incident-response opportunities in real and simulated chemical and biological environments. Critical first-responder topics are introduced in the classroom, translated into laboratory experiences, then enacted during a culminating, realistic-scenario exercise.

Taught by Ph.D.-holding subject matter experts, ACBIRC focuses on agent characteristics, sampling, protection, detection, decontamination, and signatures.

Students work with actual biological and chemical agents in laboratories rated at biological-safety levels 2 and 3 and in certified chemical facilities. Simulants that trigger detectors systems enhance practical exercises.

ACBIRC is one among various state-of-the-art counter-terrorism courses offered by U.S. Army Dugway Proving Ground's Special Programs Division.



ACBIRC

WMD-CST PROGRAM

- Chem/Bio Level 1
- Chem/Bio Level 2
- Field Training Exercise (FTX)
- Mobile Training Team (MTT)
- Combination Courses (Multi week/CB L1 & FTX)



IC COUNTERPROLIFERATION TRAINING PROGRAM

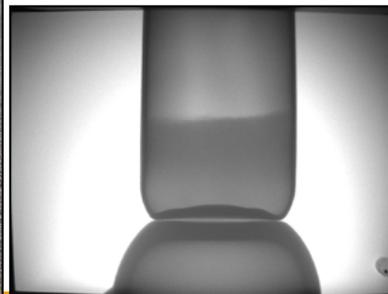
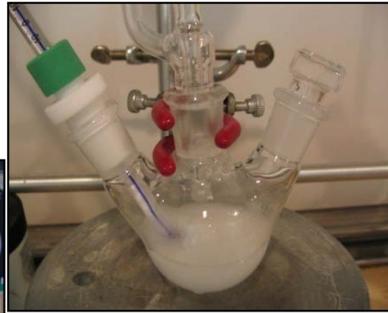
- The most advanced WMD Counterproliferation and Counterterrorism training provided to intelligence officers anywhere in the U.S. government
- Primary provider of WMD Intel training to US Intelligence Community



Chemical Energetics Course “CEC”

Theater-relative Terrorist Explosives synthesis, detection, identification, testing & mitigation

- Peroxide Explosives TATP, HMTD
- Peroxide Explosives as Initiators
- Urea Nitrate
- Ammonium Nitrate Fuel Oil
- R-Salt
- RDX and C-4
- Picric Acid
- Silver Nitrate
- Silver Fulminate
- K9 Explosives Detection



SPECIAL PROGRAMS DIVISION

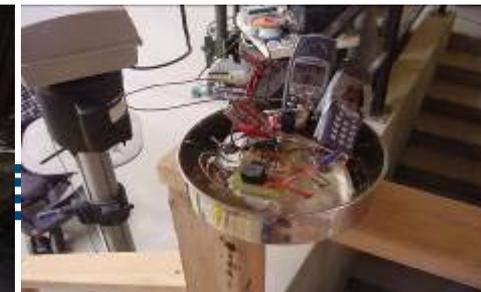
CHEMICAL ENERGETICS COURSE

DUGWAY PROVING GROUND UTAH
WEST DESERT TEST CENTER

A collage of images related to the Chemical Energetics Course. The collage includes a grid of small images showing various experiments, explosions, and laboratory equipment. The text "SPECIAL PROGRAMS DIVISION" is at the top, "CHEMICAL ENERGETICS COURSE" is in the center, and "DUGWAY PROVING GROUND UTAH WEST DESERT TEST CENTER" is at the bottom. There are also logos and a small image of a dog.

IED/IDD LAB

- Manufacture of IED/IDDs to meet customer reqs
- Conventional, Chemical and Biological devices
- IR, motion sensitive and remote detonation capability



Training HME Targets

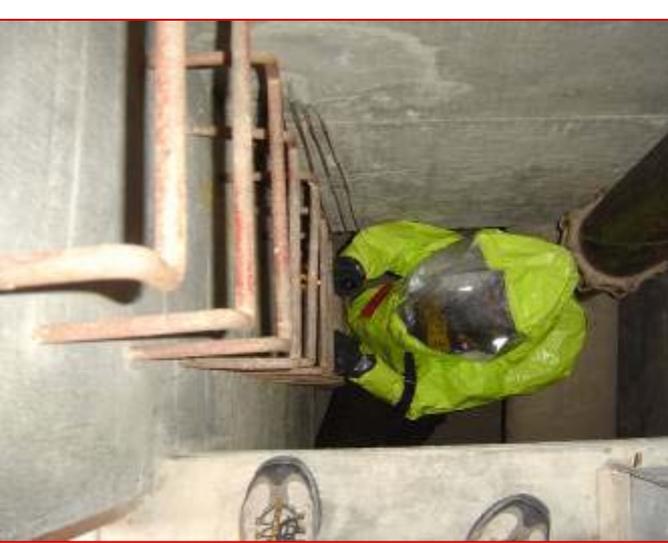


MOBILE TRAINING TEAMS

- Multi-day chemical and biological exercises executed at teams' home station or location of own choosing
- Exercise scenarios presented in a variety of settings intended to challenge teams' Mission Essential Task List (METL)



Avery Tunnel Confined Space Training Area



- Tunnel is concrete construction, similar to a storm drain of a city
- Used for operational testing
- TTP development and verification



GWOT Training Facility

- Third world target
- Breaching walls
- Tunnel complex
- Heavily fortified
- Operational testing
- TTP development



GWOT Training Facility



2009-08-17 15:53:40Z
MGRS: 12T UK 01458 45734
Alt: 4891 ft MSL
Mag: 166°



Side Camera
FOV Data:
Slant Rng: 331 m
CFOV Hdg: 96°
CFOV MGRS: 12T UK 01730 45688
Horiz. FOV: 23.8°

- Raven UAV images



V Grid Training Facility



- 2 Story Building, Ranch style House, Warehouse, Guard Shack
- Remote Terrorist Encampment
- Validate Tactics, Techniques, and Procedures
- Full use of C/B Simulants
- Remote Airfield, one mile



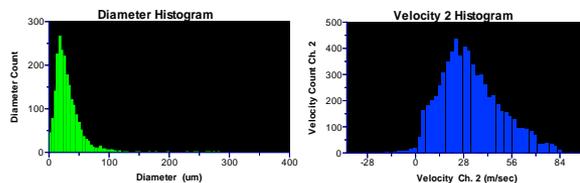
Foreign Materiel Exploitation

- NGIC sponsored test
- Chemical simulant dissemination from foreign munitions



Bio-agent Dissemination

- Bio-characterization test in JABT
- Determined efficacy of COTS pesticide sprayers as bio-agent dissemination devices
- LD50 reached within 1 minute using crude preparation of *BG* spores ($10E8$ concentration)
- Particle size, velocity, and concentration measurements taken
- Published results

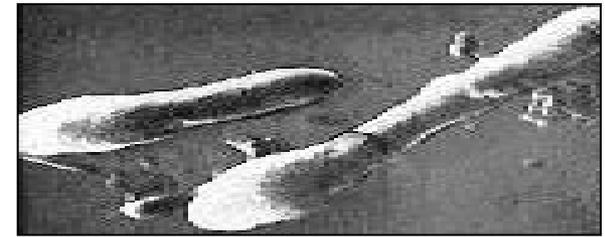


	PVC	Spatial	Channel 1	Channel 2	Channel 3
D10 (um)	31.57	0.00	34.8834	32.2288	0.0000
D20 (um)	39.86	0.00	23.8832	17.6096	0.0000
D30 (um)	52.26	0.00	68.51	54.84	0.00
D32 (um)	89.84	0.00	9.4158	11.2792	0.0000
D43 (um)	155.32	0.00	3.7105	2.8845	0.0000
Size Data Rate (Hz)	196		39.41	25.57	0.00
Size Valid Count	2182		2.15	1.66	0.00
Epsilon Exception	365		2.13	1.55	0.00
Diameter Exception	0		196	417	0
Intensity Invalid	653		3203	6797	0
		Invalid Count	0	0	0
		Filtered Time (sec)	16.2810		



Biological Agent Production

- Examination of terrorist and state sponsored protocols for extraction and production of Ricin and Botulinum toxins
- Storage, stability and extraction efficiency were measured using assays unique to DPG



Georgia



- Full Scale Biological Training and Testing Facility
- Isolation Facility
- Classroom/Planning area
- Sleeping bay for 20 Personnel



Wyoming

- Full Scale Biological Testing & Training Facility
- Isolation Facility
Classroom/Planning area
Sleeping bay for 20 Personnel
- Warehouse/Storage onsite



Yellowstone Cheyenne

- Full Large Scale Chemical Testing and Training Facility



- Full Intermediate Scale Chemical Testing and Training Facility



Ghost Building

Training/ Sleeping/ Storage

- Classroom
50' X 50'
70+ Students
- Storage/Sleeping Area
50' X 150'
 - 1 Communications Vault
 - 1 Weapons Vault
 - Showers/Restrooms
- 2 Command Buildings
Detached from Building
Phones/ Offices
- 3 Drop Zones Nearby
- Near Runway



DUGWAY MICHAEL ARMY AIRFIELD

- Capable of handling all Army & Air Force aircraft
- Fully lit 11,000 ft. runway for departures (10,000 ft. for landing)
- **7,000 ft. taxiway**
- Aircraft Decon Pad
- 20,000 ft² hangar with office space, classroom and ground handling equipment
- Secured installation in restricted airspace
- All season operations
- Crash rescue operations on the airfield
- Aviation gas capable



DUGWAY SUPPORT

- Mission Control Center
- Secret Vault at WDTTC
 - Secret VTC capability
- Top Secret secure facility at English Village Command Center
- Range Control Operations Video Conference Centers (VCC)
- Meteorological Support
- Logistic Support
- Ammo Storage Facilities
- 24 hour security
- Manned Fire and Medical Aid



DUGWAY PROVING GROUND

QUALITY OF LIFE

- Community Club
- Shoppette/BX
- Lodging/Barracks
- Commissary
- 24 Hour Security Force
- Manned Fire and Medical Aid
- Recreation
 - Golf Course
 - Bowling Center
 - Theater
 - Fitness Center
 - Swimming Pool

