Centrum pro výzkum toxických látek v prostředí

Lekce 14
ENV012
Chemická bezpečnost a hazardní materiály
INVESTIGATION OF ALLEGED USE OF CBRN

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esf evropský sociální fond v ČR | EVROPSKÁ UNIE | MINISTERSTVO ŠKOLSTVÍ, MLÁDEŽE A TĚLOVÝCHOVY | OP Vzdělávání pro konkurenceschopnost | UNIVERSITAS MASARYKIANA BRUNENSIS

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Příprava tohoto předmětu je spolufinancována Evropským sociálním fondem a státním rozpočtem České republiky

IAU

OPCW

IAU of CWs

- Investigation of Alleged use of Chemical Weapons (IAU) is an important aspect of the Chemical Weapons Convention (CWC). An IAU could either be launched under Article IX, CWC to address the non compliance concerns regarding the use of CW or it could be also initiated consequent to the receipt of a request for assistance made under Article X of the CWC. In such a case the investigation is launched to provide foundation for further action related to delivery of assistance.

PART XI

INVESTIGATIONS IN CASES OF ALLEGED USE OF CHEMICAL WEAPONS

A. GENERAL

1. Investigations of alleged use of chemical weapons, or of alleged use of riot control agents as a method of warfare, initiated pursuant to Articles IX or X, shall be conducted in accordance with this Annex and detailed procedures to be established by the Director-General.

2. The following additional provisions address specific procedures required in cases of alleged use of chemical weapons.

B. PRE-INSPECTION ACTIVITIES

Request for an investigation

3. The request for an investigation of an alleged use of chemical weapons to be submitted to the Director-General, to the extent possible, should include the following information:

(a) The State Party on whose territory use of chemical weapons is alleged to have taken place;

(b) The point of entry or other suggested safe routes of access;

(c) Location and characteristics of the areas where chemical weapons are alleged to have been used;

(d) When chemical weapons are alleged to have been used;

(e) Types of chemical weapons believed to have been used;

(f) Extent of alleged use;

(g) Characteristics of the possible toxic chemicals;

(h) Effects on humans, animals and vegetation;

(i) Request for specific assistance, if applicable.

4. The State Party which has requested an investigation may submit at any time any additional information it deems necessary.

Report IAU

Contents

24. The situation report shall indicate any urgent need for assistance and any other relevant information. The progress reports shall indicate any further need for assistance that might be identified during the course of the investigation.

25. The final report shall summarize the factual findings of the inspection, particularly with regard to the alleged use cited in the request. In addition, a report of an investigation of an alleged use shall include a description of the investigation process, tracing its various stages, with special reference to:

(a) The locations and time of sampling and on-site analyses; and

(b) Supporting evidence, such as the records of interviews, the results of medical examinations and scientific analyses, and the documents examined by the inspection team.

26. If the inspection team collects through, inter alia, identification of any impurities or other substances during laboratory analysis of samples taken, any information in the course of its investigation that might serve to identify the origin of any chemical weapons used, that information shall be included in the report.

Investigation Quarries and Evidences

Provide Information and Evidences	Investigation Questions	Collect and Assess Information and Evidences
	WHEN? **WHAT?** **HOW?** **WHO?** **WHY?**	

IAU Exercises

- Investigation of Alleged Use of Chemical Weapons Exercise conducted in Czech Republic on October 17-21, 1999. This trial was the 1st historical full fledge field exercise of an inspection activity as investigation-forensic type of inspection.
- The 2nd field IAU exercise was conducted with cooperation of the Poland during June 26 till July 1, 2000.
- The 3rd IAU exercise was performed in Czech Republic on March 28 till April 2, 2003.

IAU and CBRNE Forensic

- Despite the fact that the risk of CBRNE attacks is consider to be low, one of the questions that need to be addressed is
- "How much CBRNE capabilities and capacities are needed"?
- How much specialists is required, what do they need to do, what they to be equipped and why and where does such capability to be reside?

Alleged use of CW

- Alleged CW use:
  - types of CWs and delivery systems used;
  - number of weapons/delivery systems used;
  - time of the alleged CW use;
  - duration of attack/use;
  - specifics of the alleged CW use/attack;
  - extent of CW use (infrastructure(s) affected);
- Characteristics of the possible toxic chemicals:
- Effects on humans:
  - estimated number of fatalities,
  - number of hospitalised victims,
  - other victims (signs and symptoms at the time of the attack and delayed signs and symptoms);

Alleged use of CW

- Location(s) where the use of chemical weapons is alleged to have taken place:
- location name,
- geographic co-ordinates,
- location in relation to another known location (by direction and distance),
- Characteristics of the site(s):
  - military;
  - civil (town, rural area, buildings affected),
  - nature of the terrain (relief, vegetation),
  - accessibility of the site,
- Meteorological conditions during the alleged use of CW

Alleged use of CW

- Effect on animals:
  - signs;
  - symptoms;
- Effects on vegetation (signs of contamination);
- Impact on infrastructure:
  - type and persistency of contamination;
  - damage;

Alleged use of CW

- Measures already taken or initiated by the Authorities:
- Evacuation and hospitalization of victims;
- Investigation activities initiated;
- Evidence preserved;
- Preliminary identification of CWs alleged to have been used:
  - types of samples identified in situ, including any unexploded munitions or remnants of munitions;
  - types of samples analyzed, if any;
- Results of available analyses, if any;

Key activities during the IAU CWs

- C4 Command Post Operations – C4 Command-Communications-Collection of Data-Control
- Chemical and Explosive Ordnance Reconnaissance
- Non-Destructive Evaluation (NDE) of CW Ordnance
- Sample Collection and Analysis On-Site
- Medical Investigation and Bio-sample Collection
- Negotiations
- Interviewing (authorities, victims, witnesses)
- Reporting
- Decontamination Support (Decontamination Control Station)
- Health and Safety Support
- Logistic Support

Operations and support expertise divisions

- Investigation of Chemical Weapons Operations
  - Chemical/explosive ordnance reconnaissance
  - Sample collection and chemical analysis
  - Non-destructive evaluation techniques
  - Evidence collection
- Medical/Health and Safety
  - Medical Examination/Investigation & Interviews
  - Health &Safety Support
- Support
  - Communication, Command & Control
  - Evidence collection and Reporting
  - Decontamination
  - Security
  - Logistics and transportation

Reconnaissance/Detection

EOD/UXO Reconnaissance

?Sampling?

Sarin Fountain of the Hell

Sampling and Detection

Liquid Sample Taking

Sampling A.S.A.P

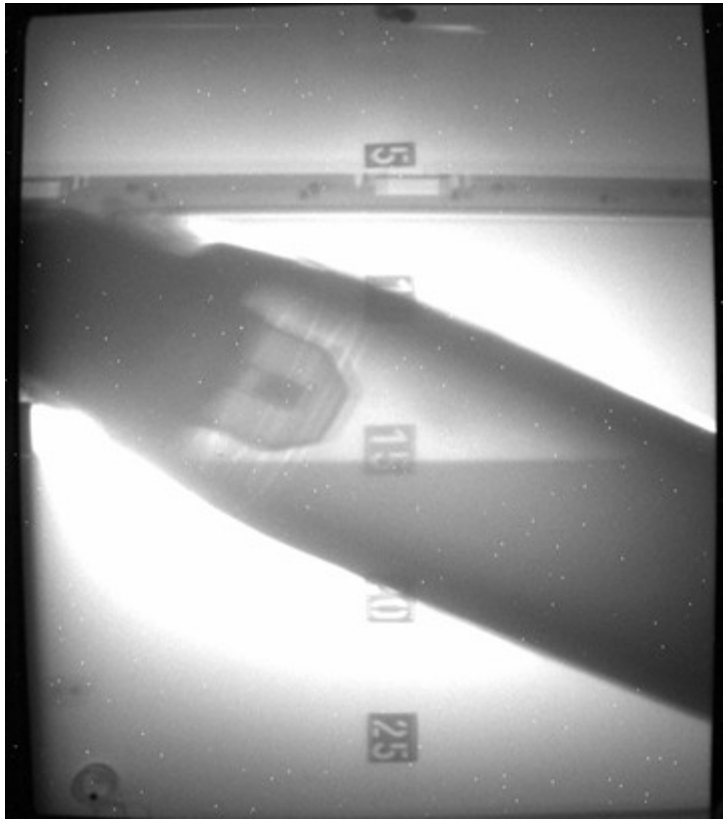
Sample Packing and Sealing

Packing Samples for Transport and Chain of Custody

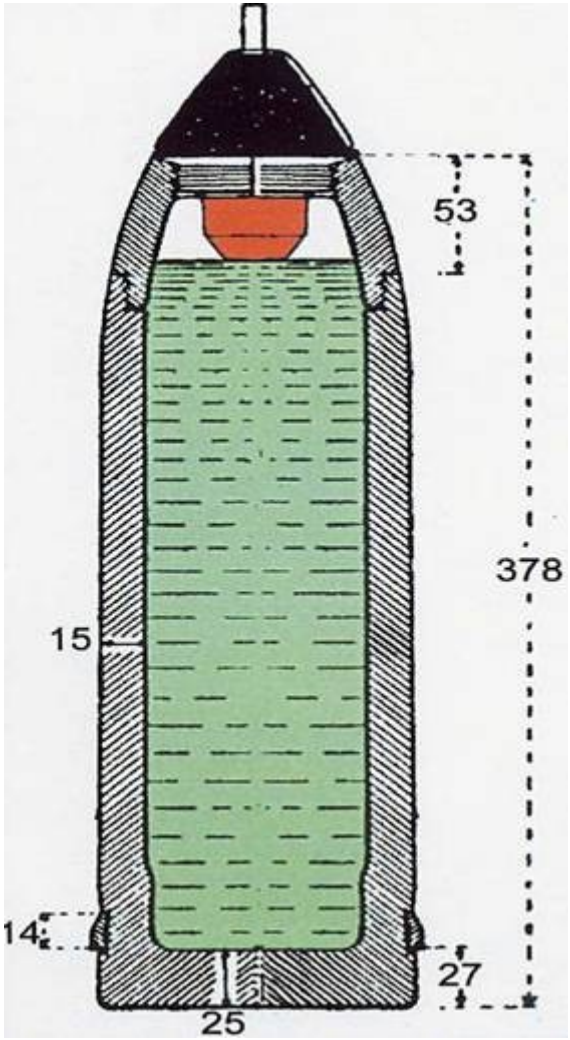
On-Site Analysis

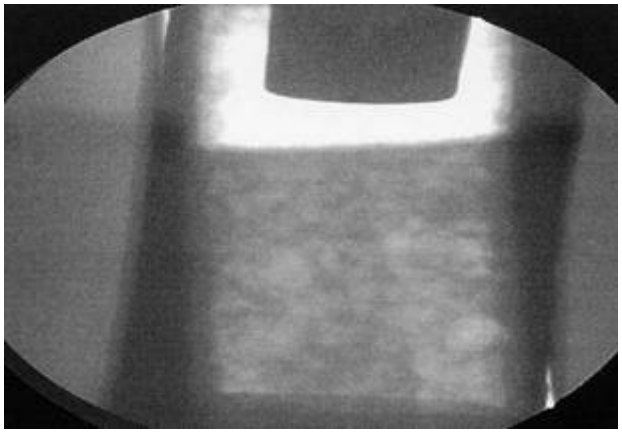
Non-Destructive Evaluation
X-Ray Imaging

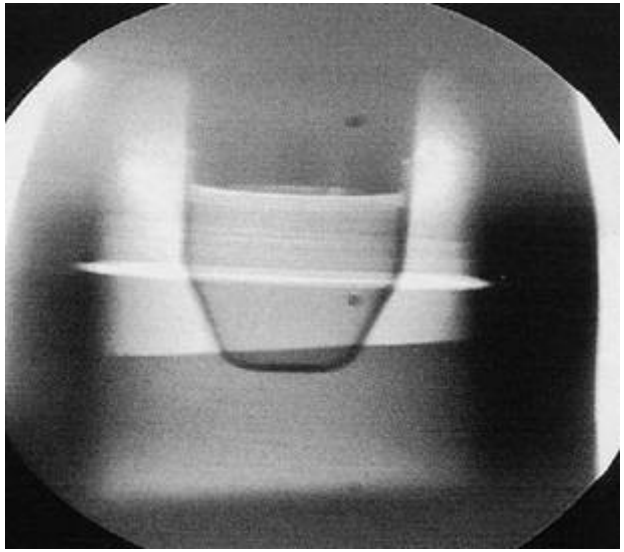
X-Ray Image of Liquid Fill



Level of Liquid Fill







The Neutron Induced Gamma Spectrometer

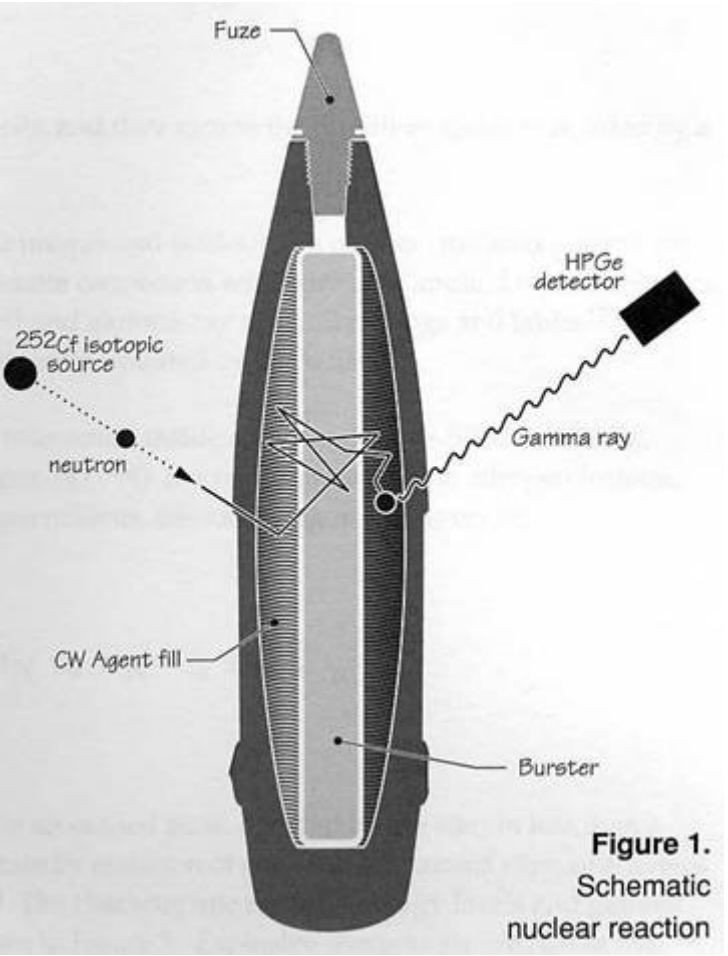
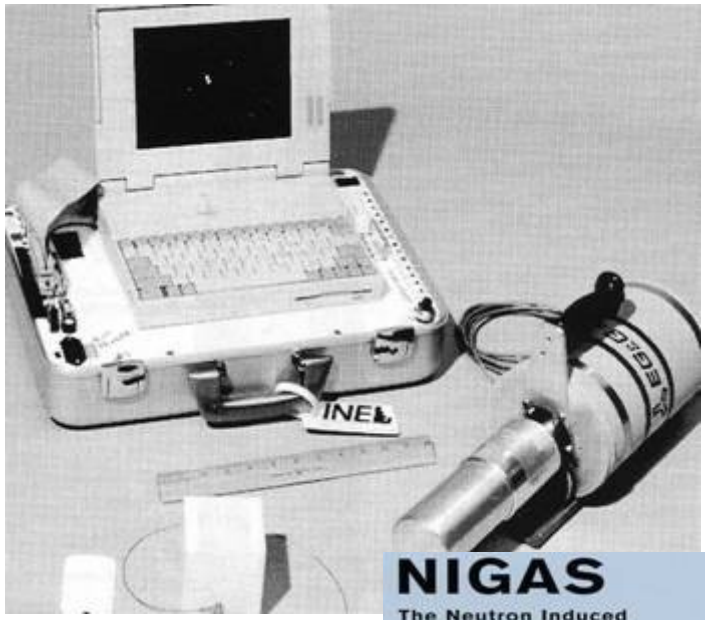


Figure 1. Schematic nuclear reaction



Medical Examination/Investigation & Interviews

Victims

Medical Examination/Investigation & Interviews

Interview victims/witnesses

Bio-sampling

Health & Safety Support

Buddy Rescue

IAU Team
Decontamination Control Station

Decontamination Control Station

Sample Decontamination

Decontamination Procedures

When is CBRN Forensic Science Needed?

- The Forensic Science needs are derived from Conventional Forensic Science in order to investigate crime scene and answer three principal questions:

1. Has a crime act been committed?
2. Who is (are) affected/victimized
3. Who is (are) responsible for crime? and
4. Is the suspect responsible for the crime act?

- In this regard the link of CBRNE Forensic Science to Conventional Forensic Science should be following:

1. Has a crime act/release of CBRN been committed/occurred?
2. Who is (are) affected/victimized by the CBRN attack?
3. Who is responsible for the crime act/CBRN attack?
4. Is there a suspect responsible for the crime act/release?
5. What is the likely release?

Challenge for Investigators

- Contaminated Environment of the Scene including Evidences

CBRNE

?Crime Investigators?

The role of the Forensic Scientists

There are several main areas of duties:

1. Examination of physical evidence
2. Reporting on results of a forensic examination
3. To assists in tracing an offender
4. Provision of evidence for presentation of a case to a court
5. Present verbal evidence in court (expert testimony)
6. Training of police officers to become “forensically minded” when investigating crime scene

- CBRN Forensic Team will in the form of specialists composing multidisciplinary investigation team enable to work effectively under CBRN HazMat environmental conditions

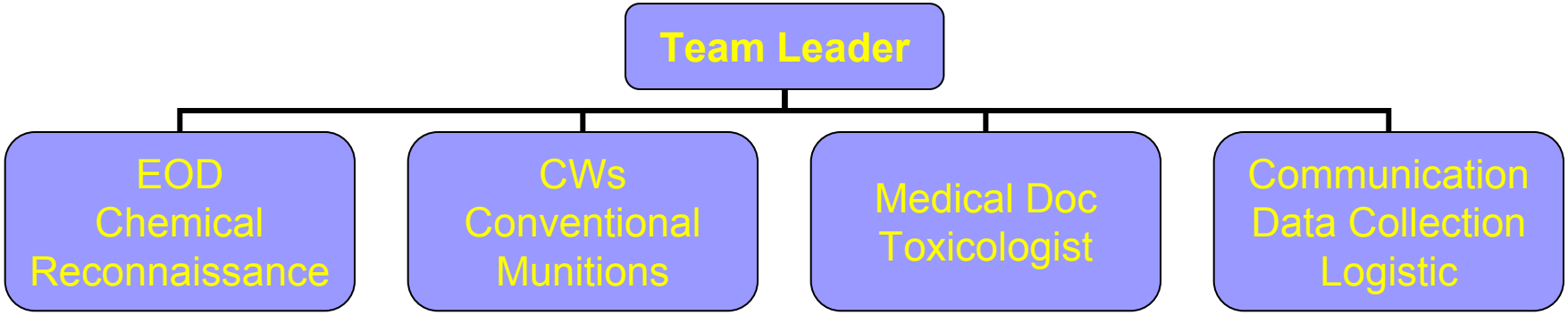
Qualification of Investigators

- The qualification of those individuals and/or teams doing CBRN Forensic is crucial because the results of the investigation are very important in order to decide if they are conclusive or inconclusive.
- Technical capabilities of CBRN Forensic individuals are so high that ordinary individuals/responders/soldiers not "forensically minded" could actually **compromised** the successful identification of CBRN materials and nature of CBRN attack.

Investigation team expertise composition

- Command
- Crisis and Consequent Management
- Explosive Ordnance Disposal/Unexploded Ordnance
- Chemical Weapons
- Conventional Weapons
- NBC/CBRN service
- Analytical Chemistry
- Chemistry/Chemical Technology
- Forensics
- Medicine
- Pathology
- Dermatology
- Toxicology
- Microbiology
- Epidemiology
- Anthropology
- Plant Pathology
- Sociology
- Psychology
- Ethnology
- Interviewing
- Interpretation
- Communication
- Logistician

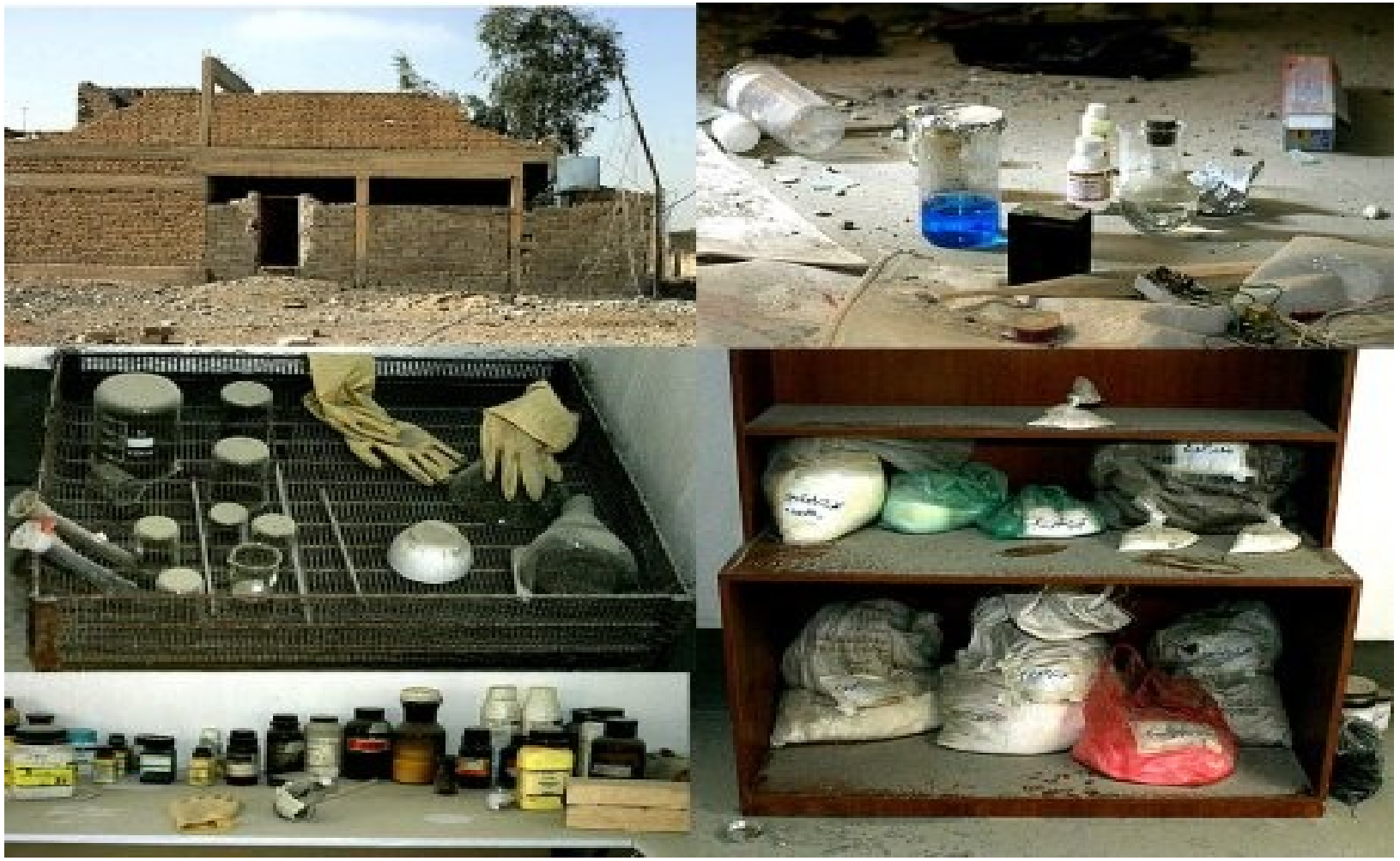
Advance IAU Team



Hands-on skills/Training

- Hazard identification
- Personal protection
- Detection
- Reconnaissance
- Sample collection (environmental and biological samples)
- Handling samples (Chain of custody)
- On-site analysis
- Non Destructive Evaluation
- Decontamination
- First Aid
- Interviewing
- Recording/Documentation
- Reporting
- Communication
- Good Laboratory Practice regulations (GLP)

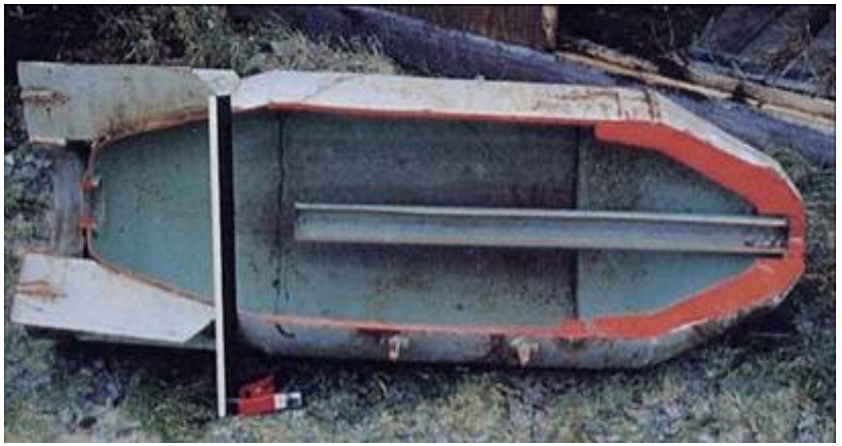
Terrorist Lab



Mobile Chemical Binary Pickup

Dual Purpose Items

Large Volume CW Ordnance



Witness for Interview and Potential Victim

Epilog