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1. OVERVIEW
### Overview
- ACW types & chemical agents -

#### Misc. ACW components
- Drum Can for Yellow agents
- Booster Tube
- Burster Tube

#### Shells
- 400mm
- 200mm
- 75 mm shell
- 90 mm Mortar shell
- 105 mm shell
- 150 mm shell

#### Gas Pots
- 200mm
- Small Red Gas Pot
- Medium Red Gas Pot
- Large Red Gas Pot

<table>
<thead>
<tr>
<th>Agent type</th>
<th>Military Designator</th>
<th>Name of Toxic Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blister agent</td>
<td>Yellow</td>
<td>Mustard, Lewisite</td>
</tr>
<tr>
<td>Vomiting agent</td>
<td>Red</td>
<td>DC, DA</td>
</tr>
<tr>
<td>Lachrymatory agent</td>
<td>Green</td>
<td>Chloroaceto-phenon</td>
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<tr>
<td>Pulmonary agent</td>
<td>Blue</td>
<td>Phosgene</td>
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<tr>
<td>Smoke agent</td>
<td>White</td>
<td>trichloroarsine</td>
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Overview - Operation process -

**STEP 1** Discovery
- Notify JPN of the discovery of suspected items

**STEP 2** Bilateral on-site investigation
- MFA Japan dispatches an investigation team
- Confirm the origin of the suspected items
- Consider further recovery plan, if necessary

**STEP 3** Excavation and Recovery
- Excavation with cooperation of China
- Identification of recovered items by external features and X-ray device
- Compensation to the local community
- ground preparation
- Decontamination support
- Coordination with local government

**STEP 4** Storage
- Storehouse construction
- Security and maintenance
### Overview

- **Operation process**

#### STEP 5  Transportation
- Routing survey
- Risk assessment
- Coordination with local gov.

#### STEP 6  Destruction
- Technology selection
- Procurement of the technology
- On-site destruction operation with assistance of China

#### STEP 7  Waste Management
- Treatment of hazardous wastes
- Final disposal

- Site selection
- Site construction
- on-site medical support
- Procurement of explosives

- Storage of the hazardous wastes

etc.
Overview
- Characteristics of ACW project -

1. Difficulty to identify accurate number and locations

Project implementation plan must be modified according to unexpected discoveries

2. ACWs left in the least preferable environment

Difficulty to handle corroded or damaged ACWs affects every aspect of the project (excavation, transportation and destruction)

3. Bilateral project being carried out overseas

Significant efforts for management and coordination are required
Overview
- Budget allocated for ACW project -

1.00EUR = 137.00JPY
JPN government rate for FY2016

Budget allocated for ACW project

Hundred million Euros

FY2009 1.04
FY2010 1.39
FY2011 1.62
FY2012 1.56
FY2013 1.57
FY2014 1.98
FY2015 2.34
FY2016 2.54

Nanjing MDF began operation
Shijiazhuang MDF began operation
Nanjing MDF project completed
Wuhan MDF & Haerbaling TDF began operation
Wuhan MDF project completed
Overview
- Three pillars of the ACW project -

ABANDONED CHEMICAL WEAPONS DESTRUCTION PROJECTS IN CHINA

- Excavation operation
- Identification of suspected items by X-ray device

Excavation and Recovery Operation

- Nanjing MDF
- Wuhan MDF
- Shijiazhuang MDF
- Harbin MDF

Destruction by Mobile Destruction Facility

- Excavation & Recovery Operation
- Test Destruction Operation

Haerbaling Project
2. STATUS UPDATE
Since CWD2015, 512 ACW items have been recovered.
Status Update
- Excavation and Recovery -

Target area: Approx. 48ha
Magnetic reaction point: Approx. 1,000 points
Depth: Maximum 8 m
Current speed avg.: 1.0 m/sec
Status Update
- Excavation and Recovery -

EOD diver preparing for the operation

Dried-up excavation site

Recovered ACW from the river bed

Discovered ACW
Status Update
- Overview: Destruction by MDF -

as of 20th May 2016

- Nanjing MDF
  - Completed in 2012
  - DAVINCH (2 chambers)
  - Destroyed 35,861

- Wuhan MDF
  - Completed in 2015
  - DAVINCH (2 chambers)
  - Destroyed 264

- Shijiazhuang MDF
  - Began operation in 2012
  - DAVINCH (1 chamber)
  - Destroyed 2,301

- Guangzhou MDF
  - Candidate site not decided yet

Operations Complete
- Operation Phase
- Preparation Phase
- Planning Phase
Status Update
MDF – Nanjing

Destruction operation accomplished its mission
12 Oct 2010 ~ 11 Jun 2012

Destruction of
35,681 ACWs in Nanjing
100% Completed

Duration: 21 months

Duration above includes intervals between destruction operations and excludes preparation period.

The DAVINCH was deployed to Wuhan in 2014.
Status Update
MDF – Wuhan

Destruction operation accomplished its mission
26 Dec 2014 ~ 7 May 2015

Destruction of 264 ACWs in Wuhan
100% Completed
Duration: 6 months

Duration above includes an interval between two phases of destruction operations.

ACWs consolidated from 7 surrounding storehouses to Wuhan

ACWs consolidated from 7 surrounding storehouses to Wuhan

- Luoning
- Henan Province
- Zhoukou
- Xinyang
- Henan Province
- Changsha
- Yichang
- Hubei Province
- Jiangxia
- Yueyang
- Hunan Province

MDF – Wuhan

Duration above includes an interval between two phases of destruction operations.
Status Update
MDF – Shijiazhuang

Destruction Operation currently ongoing
12 Dec 2012 - Present
(Winter suspension period: Mid-December to early April)

- In 2015, 594 ACWs transferred from Tianjin, together with 15 items left from the previous year were destroyed.
- 222 ACWs stored in Taiyuan are now on their way to Shijiazhuang for destruction.

Remaining to be destroyed
226 (including 4 drums)

Year 2012: 250
Year 2013: 1,133
Year 2014: 309
Year 2015: 609
Year 2016: 226

Destruction of 2,301 ACWs in Shijiazhuang
91.1% Completed
Duration: 42 months
as of May 2016

Duration above includes winter suspension period between December and April.
Destruction of Drum Cans containing Yellow Agent

Separation Process

Drum Cans → Boring & Extraction Device → Empty Drum Cans → Yellow Agent → Glove Box → Destruction

Destruction

- Destruction by Detonation Chamber
- Pre-Destruction Treatment Equipment to extract the yellow agent from the drums
- Usage of small container for Yellow Agent for detonation
Status Update
MDF – Harbin

- Site preparation work is ongoing.
- DAVINCH used in Wuhan will be deployed.

Winter suspension period: Mid-December to early April
Status Update
- Haerbaling Project: Overview -

Haerbaling
Jilin Province

Beijing
Changchun

330 km
1,300 km

Test Destruction Facilities
Temporary Storehouse No.1, No.2 and No.3
Temporary Storehouse No.4 and No.5
Contaminated Waste Storehouse
Test Destruction Area
Excavation & Recovery facilities
Security building
Restricted Road
Access Road
Storage Area
E&R facilities
Administration Area
Test Destruction Facilities
Administration Building
Test Destruction Facilities
Excavation & Recovery Area
Security building
Status Update

- Haerbaling Project: Excavation & Recovery -

Excavation Facility Pit. No. 1
Top surface: 11m x 24m x H 4m
Volume 497 m³

Excavation Facility Pit. No. 2
Top surface: 10m x 20m x 20m x H 2.5-3.5m
Volume 247 m³
Status Update
- Haerbaling Project: Excavation & Recovery -

Excavation operation inside Burial Pit No. 1

Various shells being buried at Pit No.1

X-ray identification operation of an excavated item

75mm Yellow shell

Conventional shell
Status Update
- Haerbaling Project: Test Destruction -

- 2 destruction technologies: SDC1200 and DAVINCH
- Up to date, 1,449 ACW items have been destroyed.
  as of 20th May 2016
- One additional destruction facility as well as an incinerator is expected to be installed.
In addition to the above, 300,000 to 400,000 ACW items are estimated to be buried in Haerbaling.
Status Update
- Facing challenges -

- Safe & efficient under water recovery method
- Recovery and destruction method of solidified agents mixtures
- Transportation of ACWs attached with fuse
- Effective destruction of scattered ACWs
Thank you for your attention