Homeland Defense & Security Information Analysis Center

HDIAC WMD Webinar Briefing On Syrian Chemical Weapons Destruction March 30, 2015

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Department of Defense Information Analysis Centers

OBJECTIVE OF WEBINAR

- **Provide information on the complete Syrian chemical weapons destruction effort**

- **Present some details on the U.S. involvement in the destruction of the Syrian chemical weapons**

BACKGROUND

Numerous events occurred in 2012 and 2013 which ultimately led to the destruction of the Syrian chemical weapons

SIGNIFICANT EVENTS IN 2012

July 23, 2012

August 20, 2012

December 23, 2012

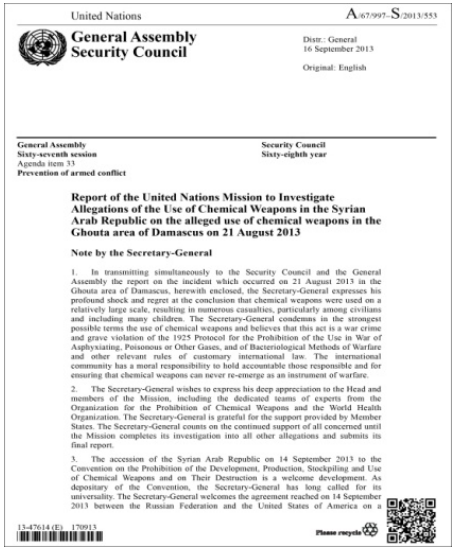
SIGNIFICANT EVENTS IN 2013

March 20, 2013

March 21, 2013

August 26, 2013

August 30, 2013



United Nations A/67/997–S/2013/553

General Assembly
Security Council

Distr.: General
16 September 2013

Original: English

General Assembly
Sixty-seventh session
Agenda item 33
Prevention of armed conflict

Security Council
Sixty-eighth year

Report of the United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic on the alleged use of chemical weapons in the Ghouta area of Damascus on 21 August 2013

Note by the Secretary-General

1. In transmitting simultaneously to the Security Council and the General Assembly the report on the incident which occurred on 21 August 2013 in the Ghouta area of Damascus, herewith enclosed, the Secretary-General expresses his profound shock and regret at the conclusion that chemical weapons were used on a relatively large scale, resulting in numerous casualties, particularly among civilians and including many children. The Secretary-General condemns in the strongest possible terms the use of chemical weapons and believes that this act is a war crime and grave violation of the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare and other relevant rules of customary international law. The international community has a moral responsibility to hold accountable those responsible and for ensuring that chemical weapons can never re-emerge as an instrument of warfare.

2. The Secretary-General wishes to express his deep appreciation to the Head and members of the Mission, including the dedicated teams of experts from the Organization for the Prohibition of Chemical Weapons and the World Health Organization. The Secretary-General is grateful for the support provided by Member States. The Secretary-General counts on the continued support of all concerned until the Mission completes its investigation into all other allegations and submits its final report.

3. The accession of the Syrian Arab Republic on 14 September 2013 to the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction is a welcome development. As depositary of the Convention, the Secretary-General has long called for its universality. The Secretary-General welcomes the agreement reached on 14 September 2013 between the Russian Federation and the United States of America on a

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September 16, 2013

UNITED NATIONS
SECURITY COUNCIL

September 27, 2013

SIGNIFICANT EVENTS IN 2013

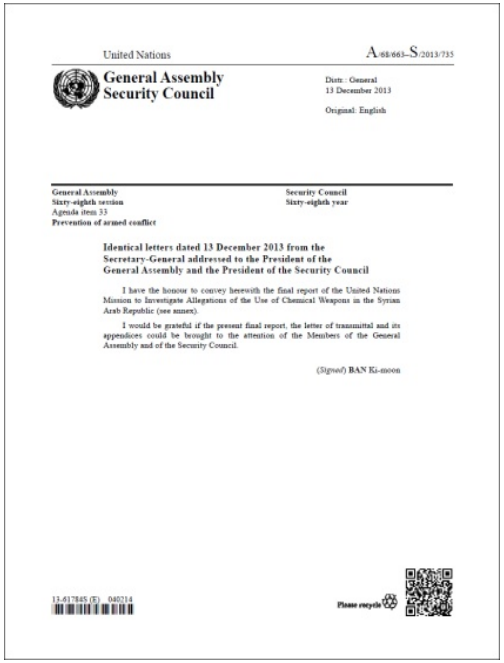
October 1, 2013

Organisation for the Prohibition of Chemical Weapons

October 31, 2013

U.S. Department of Defense

December 5, 2013



United Nations A/68/663–S/2013/735

General Assembly
Security Council

Distr.: General
13 December 2013

Original: English

General Assembly
Sixty-eighth session
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Identical letters dated 13 December 2013 from the Secretary-General addressed to the President of the General Assembly and the President of the Security Council

I have the honour to convey herewith the final report of the United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic (see annex).

I would be grateful if the present final report, the letter of transmittal and its appendices could be brought to the attention of the Members of the General Assembly and of the Security Council.

(*Signed*) BAN Ki-moon

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December 12, 2013

Executive Council

Organisation for the Prohibition of Chemical Weapons

November 15, 2013

KEY COUNTRIES AND ORGANIZTIONS INVOLVED

- China
- Denmark
- Finland
- Germany
- Italy
- Norway
- Organisation for the for the Prohibition of Chemical Weapons (OPCW)
- Russia
- Syria
- United Nations (UN)
- United Kingdom
- United States

MOVEMENT OF SYRIA'S STOCKPILE

- Syria's chemical weapons stockpile involved transporting all chemicals from more than 20 sites to the Syrian port Latakia
- 1st load of transported chemicals arrived at Latakia on January 7th and last load arrived on June 23rd 2014
- Total of 1,308 metric tons of chemicals: 1,047 metric tons of Priority 1 chemicals and 261 metric tons of Priority 2 chemicals

  - Priority 1 chemicals: methylphosphonic difluoride (DF), isopropanol and mustard

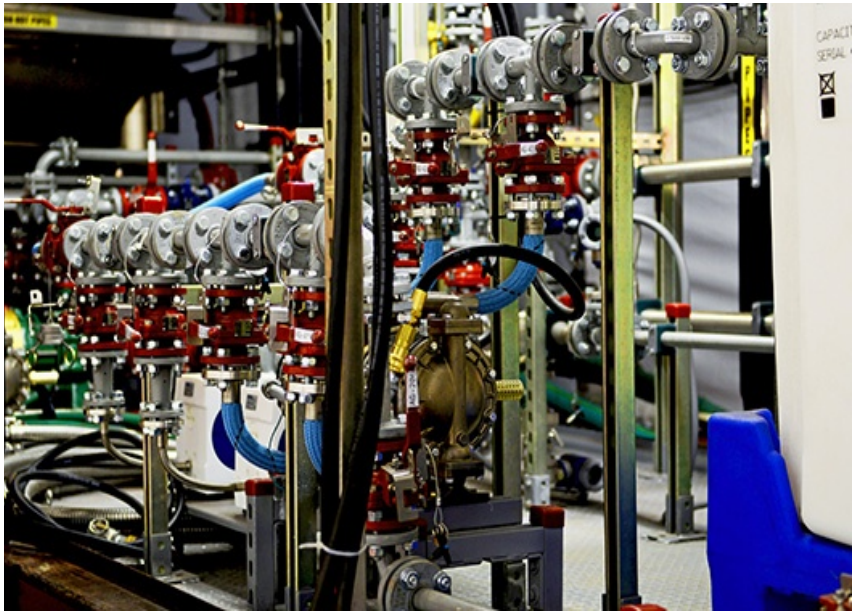
  - Priority 2 chemicals: less dangerous precursor chemicals

MOVEMENT OF SYRIA'S STOCKPILE

- Chemicals transloaded at Latakia onto two freighters – *Ark Futura* (Denmark) and *Taiko* (Norway)
- The *Ark Futura* transported chemicals to Italian port Gioia Tauro; transferred 600 metric tons of Priority 1 chemicals to *Cape* Ray then on to UK where it off-loaded 150 metric tons of chemicals for incineration at two sites
- The *Taiko* went from Syria to Finland where it off-loaded 130 metric tons of chemicals for incineration
- The *Taiko* traveled to Texas where it off-loaded several hundred metric tons of chemicals for incineration
- Multinational Maritime Task Force comprised of forces from Denmark, Norway, Russia, China, UK and Finland were positioned in the eastern Mediterranean Sea to provide secure transportation of chemicals to their ultimate destruction location

CRITICAL ITEMS USED IN DESTRUCTION OF SYRIA'S CATEGORY 1 CHEMICALS

- Two critical components provided by the U.S.
  - Field Deployable Hydrolysis System (FDHS)
  - MV *Cape Ray:* older roll on/roll-off freighter



FDHS Installed Aboard MV Cape Ray

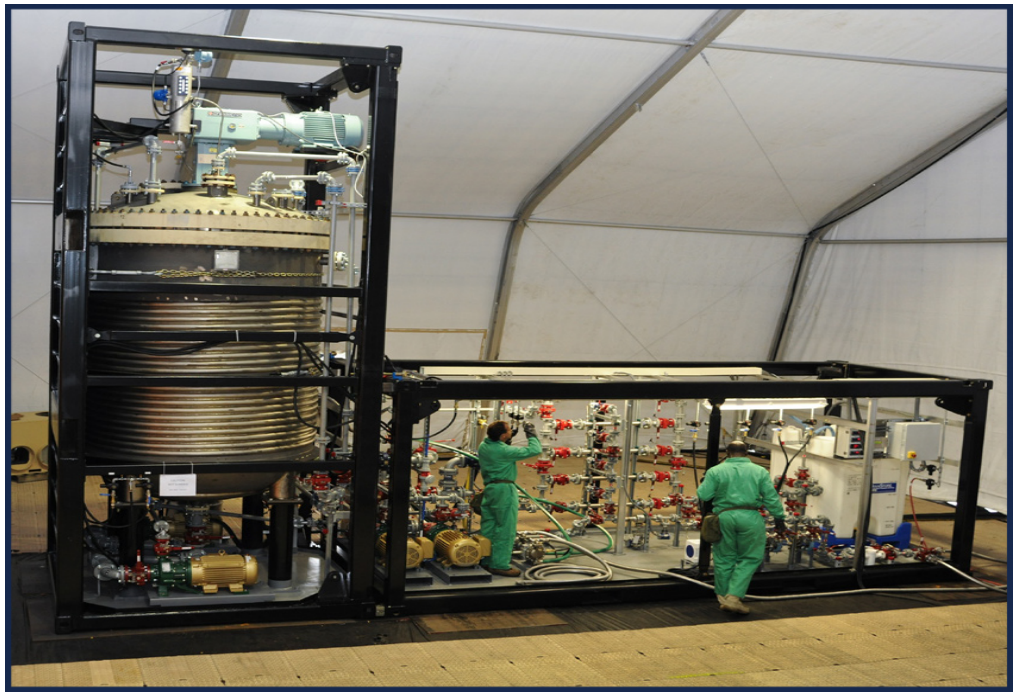
MV Cape Ray in Rota, Spain

FIELD DEPLOYABLE HYDROLYSIS SYSTEM (FDHS)

- December 2012, DoD identified a critical gap in chemical agent disposal operations regarding Syrian chemical weapons destruction
- Fast-track acquisition project initiated in February 2013
- First unit was delivered July 1, 2013
- Design, procurement, fabrication, testing and training were produced by a government team
  - U.S. Army Edgewood Chemical Biological Center (ECBC)
  - Joint Project Manager for Elimination JPM-E)
  - Defense Threat Reduction Agency (DTRA)
  - Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD)
  - U.S. Army Chemical Materials Activity (CMA)
  - U.S. Army Contracting Command (ACC)
- Transportable, high-throughput modular demilitarization system
- Neutralization technology used to destroy bulk chemical warfare agents and their precursors by heating and mixing with reagents
- Neutralization process generates hazardous waste in volumes of 5 to 14 times the volume of chemical warfare materiel treated
- Hazardous waste can be commercially disposed of in accordance with host-nation environmental laws

FIELD DEPLOYABLE HYDROLYSIS SYSTEM (FDHS)

- Configured for shipment in approximately 35 20-foot shipping containers
- Designed for 24/7 operations
- Requires a crew of 15 personnel for each shift
- Throughput varies depending on the material being treated, with rates from five to 25 metric tons per day



Full-Scale FDHS

MV CAPE RAY

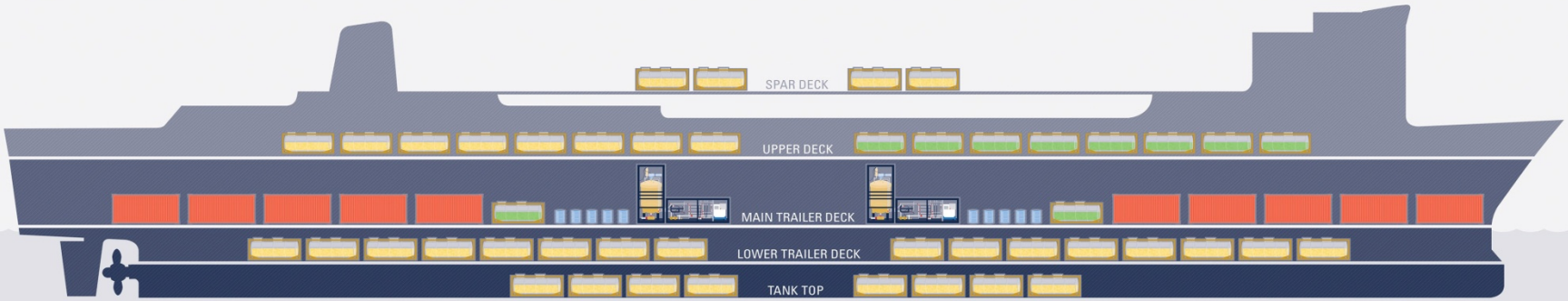
- Freighter chosen in November 2013 as a suitable platform for utilizing the FDHS
- Fitting of the two FDHS units aboard the MV *Cape Ray began in Portsmouth, VA on December 2, 2013 and completed 6 weeks later*
- *Sea trials to test the units began on January 10, 2014 and finished on January 14th*
- The MV *Cape May* departed Portsmouth on January 27th enroute to Rota, Spain
- Note: a third FDHS unit was included on the freighter as a spare

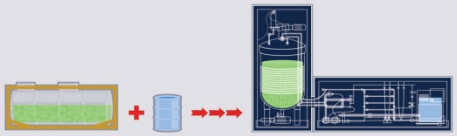
MV Cape Ray at Sea Trials

Containers of Reagents

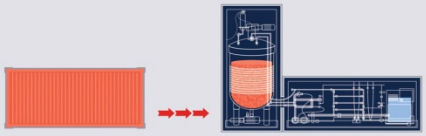
MV CAPE RAY FDHS OPERATIONS

Cape Ray Field Deployable Hydrolysis System Operations

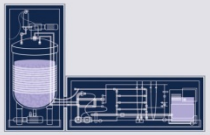




1 The system processes the caustic reagent and water.

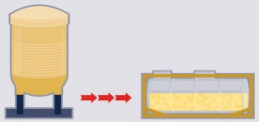


2 The system processes the chemical agent.



3 The system produces a chemical reaction and neutralizes the chemical agent.

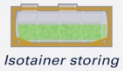
4 Operators transfer effluent to an interim holding tank for a pH adjustment (DF and mustard only).



5 Operators transfer effluent from the interim holding tank to isotainers for storage until treatment.

KEY

FDHS main system



Isotainer storing reagent

Water

Isotainer storing effluent

Interim holding tank

CONEX storing chemical agent containers

MV CAPE RAY FDHS NEUTRALIZATION OPERATIONS

- Aboard the MV *Cape* Ray: 34 mariners, 64 chemical specialists from ECBC, a security team and a contingent from U.S. European Command.
- Neutralization operations of 581 metric tons of DF began on July 7, 2014 and completed on August 13, 2014. Generated 6,000 metric tons of effluent.
- Neutralization of 19.8 metric tons of mustard began on August 13, 2014 and completed on August 17, 2014. Generated 350 to 400 metric tons of effluent.

MV CAPE RAY POST FDHS NEUTRALIZATION OPERATIONS

- The MV *Cape Ray* traveled to Bremer, Germany to deliver the effluent from the mustard neutralization operation for incineration at a land-based facility in Munster
- The *MV Cape* then continued on to Hamina, Finland to deliver the effluent from the DF neutralization operation for incineration at a land-based facility in Riihimaki
- The MV *Cape Ray* arrived back in Portsmouth, VA on September 17, 2014
- ECBC operators remained on board until month's end
  - Demobilize and recover the equipment from the ship
  - Decontaminate parts of the FDHS that had been exposed to chemical agents so the ship could be returned to the U.S. Maritime Administration

POINTS OF INTEREST REGARDING MV CAPE RAY FDHS OPERATIONS

- Original schedule projection for operation was 60-90 days
- Assumed FDHS units would be down 20% of time due to high seas and bad weather
- Average throughput rate projected to be 11 to 17 metric tons per day
- However, good weather and low seas occurred
- Actual average throughput was 14 metric tons per day
- Operation was completed in 42 days with no unplanned operating downtime
- No major incidents occurred during the operation

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