Demilitarization

CBU Demil Line Development GD-OTS and EBV EEC




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Outline of Presentation

- **Summary of Results**
- **CBU Line Requirements**
- **Approach to Fill Capability Gap**
- **Line Development Overview**
- **Overall Demil Approach**
- **Pictures and Videos**
- **Current Operational Status**
- **Demil Capability of Stockpile Assets with Submunitions**

Proprietary processes will not be discussed in this presentation

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Summary of Results

CBU Demil Line is Operating

- Safe and Efficient
- 720 Bomblets per Hour – Design Rate
  - More than 3 CBU / hour
- Timeframe from Design to Production - 8 Months
- State of the Art Equipment
  - Fully Automated Bomblet Disassembly Machine
  - Automated Inspection throughout Disassembly
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- No USG Capital Investment

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Base Year Award CBU

CDT: 1,585 Tons / 3,114 Units

DODIC	Nomen	Quantity	Tonnage [t]	Bomblets	Quantity /CBU	NEW/ CBU [lbs]	HE
E800	52B/B	790	394	BLU 61 A/B	220	134	Cyclotol
E803	58/B 58A/B	508 851	259 432	BLU 63/B BLU 63A/B	650	190	Cyclotol
E828	71/B	965	498	BLU 86/B	650	167	Comp B

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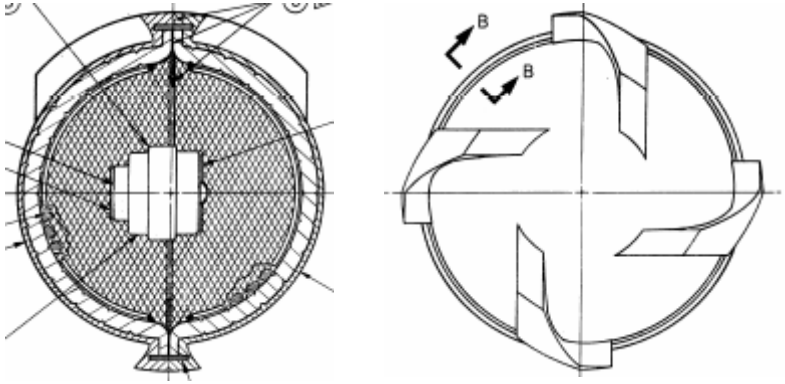
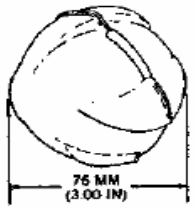
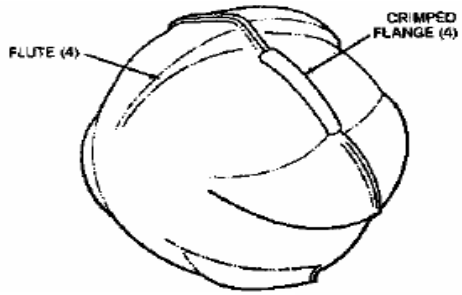
CBU Bomblets



BLU 61 A/B

Bomblets	Quantity /CBU	NEW/ Bomblets
BLU 61 A/B	220	0.61 lbs
BLU 63/B BLU 63A/B	650	0.26 lbs 0.28 lbs
BLU 86/B	650	0.26 lbs





BLU 63/B, 63A/B, BLU 86/B

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CBU Facility Requirements

- **Combination of Automated and Manual Operations**
  - **Maximum Safety / Minimum Risk**
  - **To Achieve Highest Process Efficiency**
- **High Volume Throughput**
  - **To Complete Current Contract Requirements**
  - **Enough Capacity to Deplete <u>All</u> Similar Assets in B5A Account**
- **Low Maintenance Requirements**
- **Bomblet Disassembly Operations are Remote Controlled with Video Monitoring**
- **Thermal Treatment of Energetics**

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Approach to Fill Capability Gap

GD-OTS and EBV EEC Approach

- **Full Compliance with EHS and Security Regulations**
- **Evaluate Currently Available Technologies**
- **Utilize Expertise in Ammunition, Engineering, Equipment Design, and Demil Operations**
- **Engineer a Safe, Smart Solution**
- **Result is a Safe, Efficient, and Rapid Solution to Major Demil Stockpile Problems <u>without the need for R&D</u>**

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Approach to Fill Capability Gap

Evaluation

- MIDAS
- Ammo Data Cards
- Process Lay-out
- Risk Analysis
- EHS Compliance

Facilitization

- Facilities
- Equipment
- Line Installation
- Waste streams
- Process Plans
- Training

Prove-out

- Engineering Testing
- Walk-through
- Low-rate production

Production

- Performance Evaluation
- Process Improvements

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CBU Demil Line Team

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SAB Sonderanlagenbau Nord GmbH

WMC MECHANICAL

CBU Line Start-up Schedule

Event	Original Date	Actual Date
Project Start / Initial Design	03-Aug-06	03-Aug-06
Preliminary Design Review at SAB	20-Sep-06	20-Sep-06
Manufacture Test Equipment	21-Sep-06	21-Sep-06
Engineering Tests at EBV	27-Oct-06	27-Oct-06
Critical Design Review	03-Nov-06	03-Nov-06
Manufacture Equipment	06-Nov-06	06-Nov-06
Equipment Prove-Out at SAB	08-Jan-07	08-Jan-07
Building Construction	29-Jan-07	29-Jan-07
Installation of Equipment at EBV	02-Apr-07	02-Apr-07
Prove-Out and Ramp-Up	16-Apr-07	23-Apr-07*
Low Rate Production	23-Apr-07	30-Apr-07

**** No Inert Rounds Available during Entire Effort***

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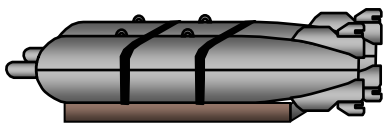
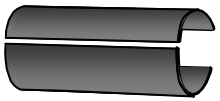
Overall Demil Approach





Depalletize	Wood/Steel Packing and Strapping	Landfill or Metal Salvage
Opening of CBU Remove Bomblets	CBU Skin Empty Shell	Metal Salvage
Opening of Bomblets Remove Fuze	Fuze Thermal Treatment	Metal Salvage
Bomblet Hemispheres	Thermal Treatment Explosive	Metal Salvage

R^3

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CBU Demil Line – Production Equipment

New CBU Building

Fixture for Opening CBU Dispenser

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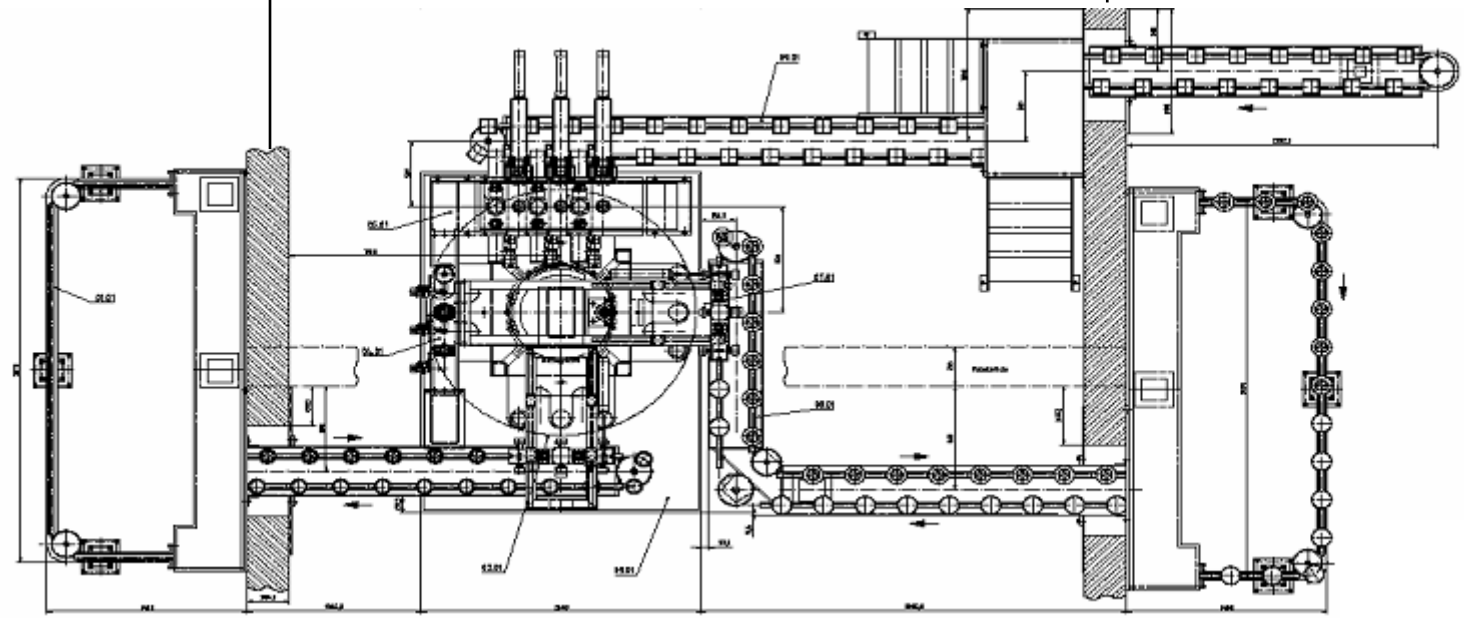
CBU Disassembly Line – Overall Layout

Top View

Input Bay | **Safety Cell / Disassembly Bay** | **Output Bay**



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CBU Demil Line – Production Equipment

Input Conveyor and Control Station for Disassembly Machine

Bomblet Spacing on Input Conveyor

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CBU Demil Line – Production Equipment

Disassembly Machine in Safety Cell

Output Conveyor for Fuzes and Bomblet Hemispheres

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Video of Bomblet Disassembly Equipment

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Video of Output Conveyor

Current Operational Status

- **Successful Prove-out and Ramp-up**
  - **System Check Out on Both Size Bomblets**
- **Flexible Design**
  - **Disassembly Equipment has Handled All Bomblet Variants Seen to Date**
- **Initial 3 weeks of Equipment Operation:**
  - **426 CBU's have been Demilitarized (95,440 Bomblets)**
  - **61 CBU's highest daily production to date**

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B5A Account for CBU Assets

- **Within the Current Contract, this Line can Demil all Assets Currently Listing in the B5A Account for these 3 DODIC's**

DODIC	Quantity	Months to Complete
E800	3,743	2
E803	15,565	26
E828	19,230	32

- **Total Time Required – Less Than 5 Years**
- **Time Based on Current Daily Production Rate at 24/7**
- **Equipment Optimization will Increase Productivity**

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Demil Center of Excellence for ICM / CBU

- **GD-OTS teamed with EBV EEC to Create the Leading Center of Excellence for Demil of Assets Containing Submunitions**
- **Engineered Solutions that are Safe, Efficient, and Low-Cost**
- **Proven Capabilities across Range of Demil Items**
- **ICM Line in Operation for 4 years**
- **Design and Implementation of CBU Line in 8 months**
- **MLRS**
  - **Engineering Studies Completed**
  - **Final Design Ready to Build to Maximize R^3 and Environmental Efficiency**

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