

Demilitarization

Commercial Demil Contract Up-date May 15, 2007



Wilfried Meyer
Demil Program Manager
727-578-8304
wmeyer@gd-ots.com

GENERAL DYNAMICS
Ordnance and Tactical Systems



GD-OTS Demil Contract Up-date

- On Aug 18, 2005 GD-OTS was awarded the Commercial Demil Contract for Base Year with four Option Years
- Demilitarization of six Families of Conventional Ammunition



Bombs



ICM



CBU



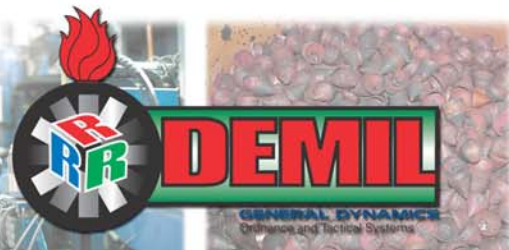
Propelling Charges



Explosive D

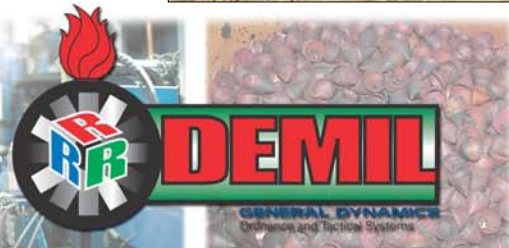


Pyrotechnics



GD-OTS Demil Contract Summary

- Program started June 30, 2006
- GD-OTS Demil Team is currently working on the Base Year and Option 1 Year Award
- Team of PM Demil, JMC, GD-OTS and Suppliers cooperated to speed-up the schedule after a 10 month Stop-Work Order
- GD-OTS independently funded more than \$1.6 Million of facility work during start-up to install new facilities and Demil production lines
- Safe and Successful Start-up Operations for all Demil Families



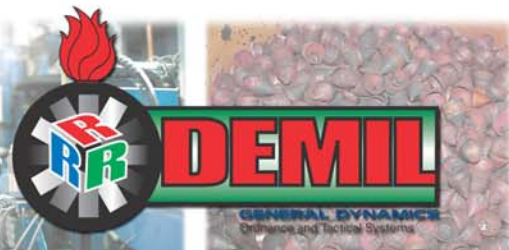
Demil 2006/2007 Expedited Start-up

Demil 2006/2007 Program Start-up

ID	Task Name	Start	2007													
			M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
1																
2	IDIQ I Demil Start-up	Mon 7/3/06		█												
3	Start-up Phase	Mon 7/3/06		█												
4	Bombs	Tue 9/5/06				█	9/5									
5	ICM	Fri 9/22/06					█	9/22								
6	Pyrotechnics	Fri 9/22/06					█	9/22								
7	Prop Charges	Mon 10/2/06						█	10/2							
8	Explosive D	Thu 11/2/06							█	11/2						
9	CBU	Mon 4/2/07													█	4/2

IDIQ I 1999-2001 Program Start-up

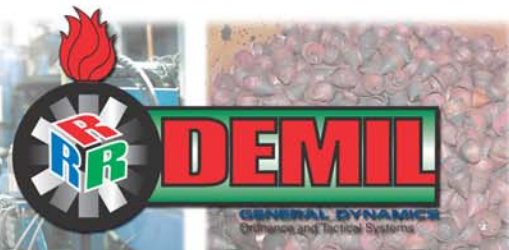
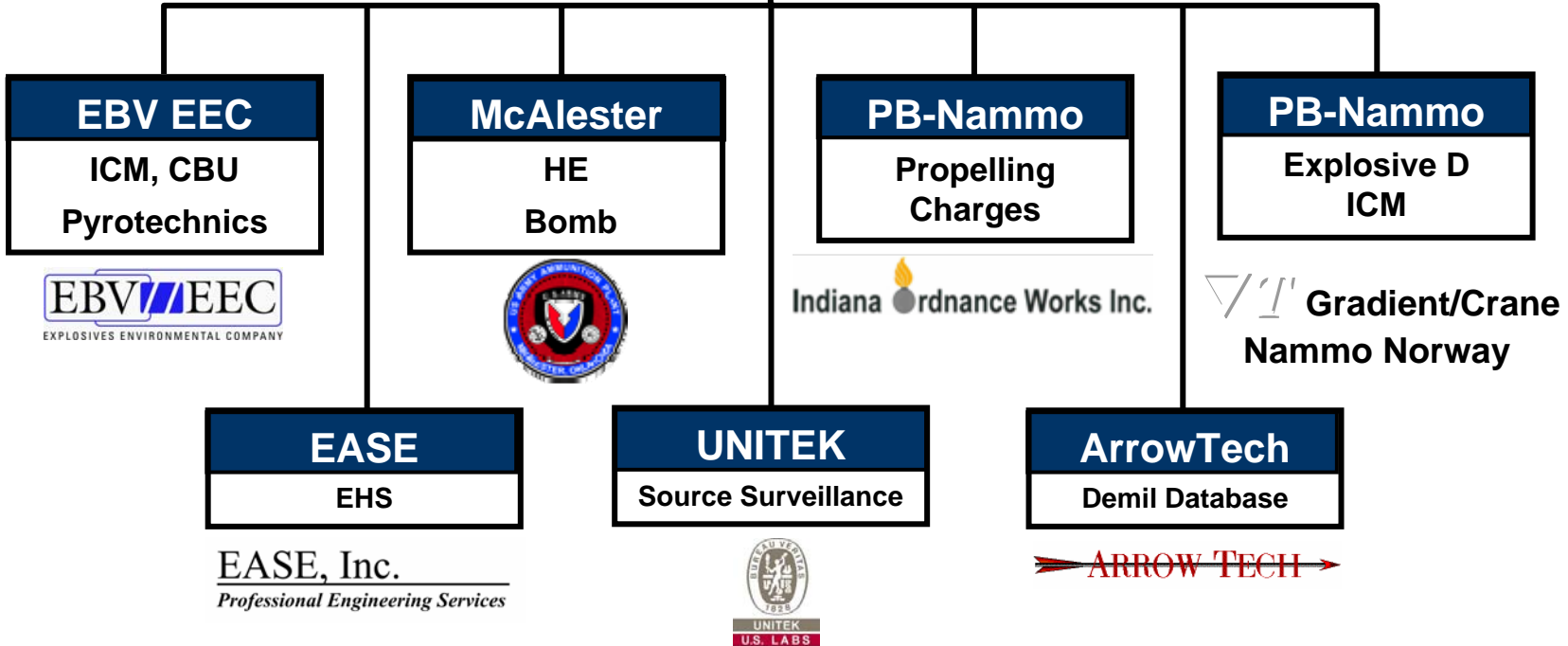
ID	Task Name	Start	2000														
			M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	
1	IDIQ I Demil Start-up	Mon 5/3/99		█													
2	Start-up Phase	Mon 5/3/99		█													
3	Small Cal	Wed 9/15/99						█	9/15								
4	Fuzes	Wed 12/1/99									█	12/1					
5	He Cartridges	Wed 1/12/00										█	1/12				
6	Prop Charges	Tue 2/15/00											█	2/15			
7	Bombs	Tue 2/15/00											█	2/15			
8	Bulk Propellant	Wed 3/15/00												█	3/15		
9	ICM	Wed 3/15/00												█	3/15		
10	Explosive D	Fri 4/14/00													█	4/14	
11	Pyrotechnics	Mon 5/15/00														█	5/1



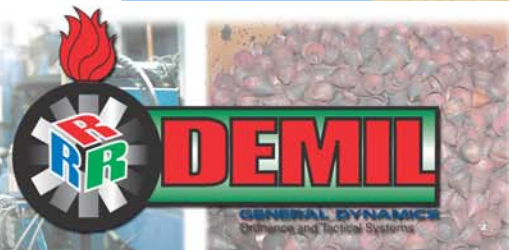
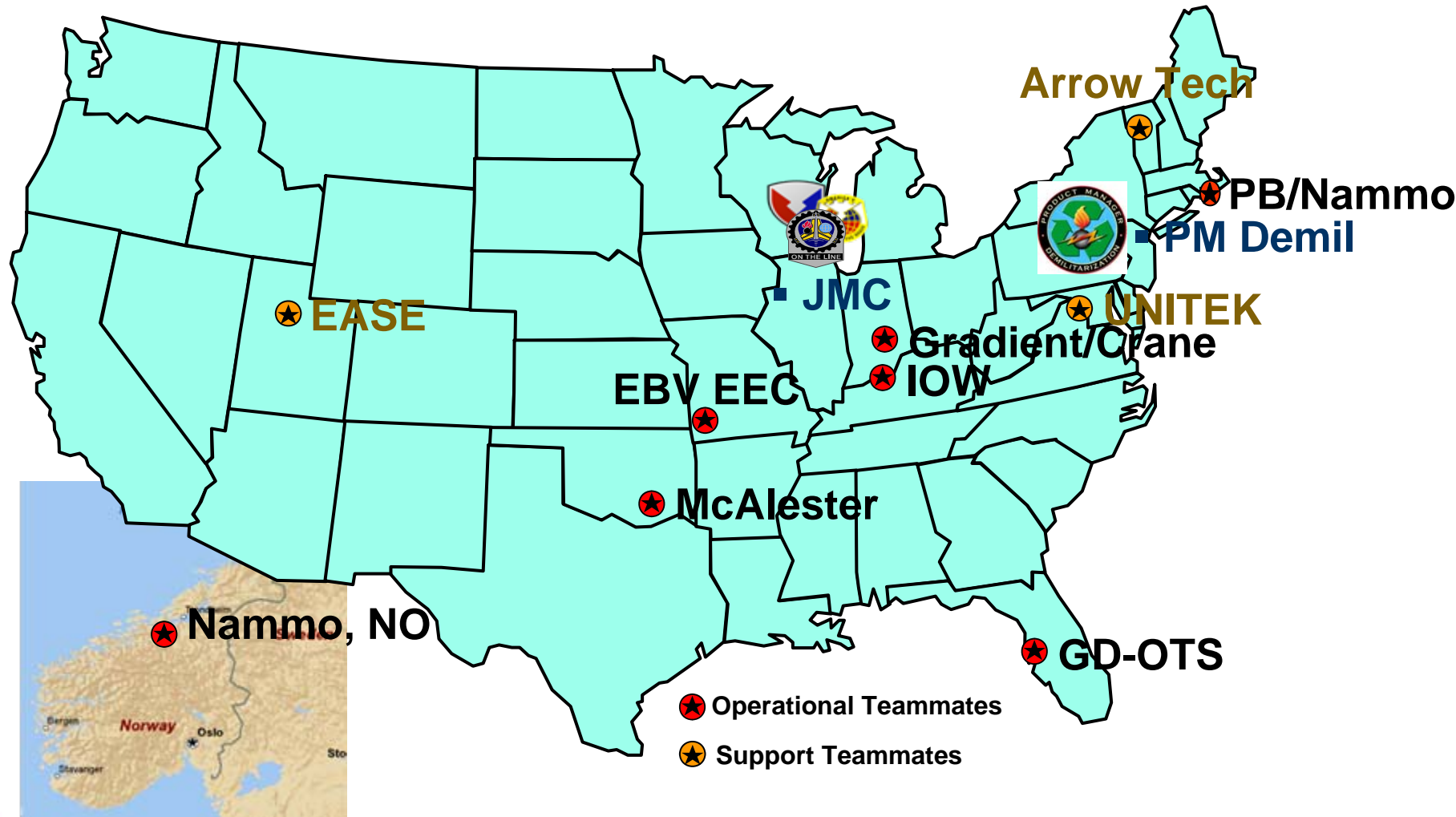
GD-OTS Demil Team



- Program Management
- Single Point of Contact
- Safety, Environmental & Quality Programs
- Continuous Improvement & Risk Mitigation
- Cost and Schedule Controls
- Contracts/Subcontracts Management




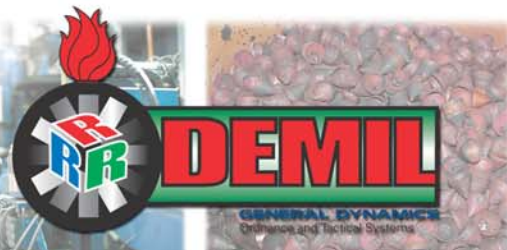
GD-OTS Demil Team Member Locations



Base Year Award


29,413 Tons / 947,549 Units

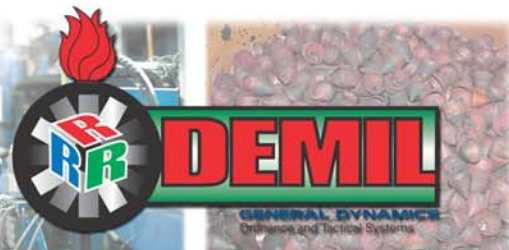
CBU: 4,583 Units 2,360 Tons	 <p>P 01/05 7771</p>	Bombs: 20,939 Rounds 10,353 Tons
Explosive D: 36,521 Rounds 2,150 Tons		Pyrotechnics: 509,890 Rounds 1,722 Tons
ICM's: 59,524 Rounds 3,244 Tons		Propelling Charges: 316,092 Rounds 9,585 Tons



Option 1 Award

20,877 Tons / 835,080 Units

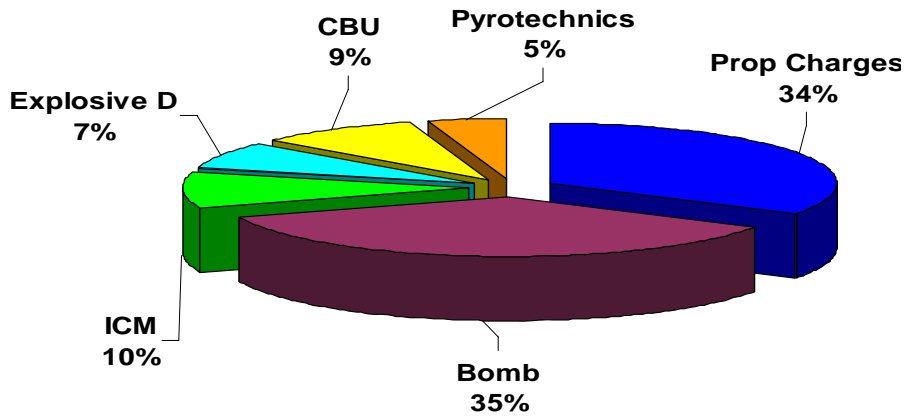
CBU: 4,450 Units 2,121Tons		Bombs: 14,784 Rounds 7,603 Tons
Explosive D: 25,786 Rounds 1,536 Tons		Pyrotechnics: 451,633 Rounds 572 Tons
ICM's: 31,542 Rounds 1,723 Tons		Propelling Charges: 306,885 Rounds 7,322 Tons



Base Year and Option 1

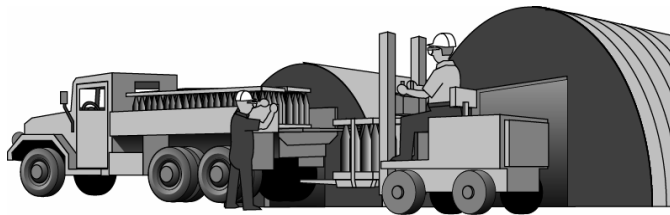
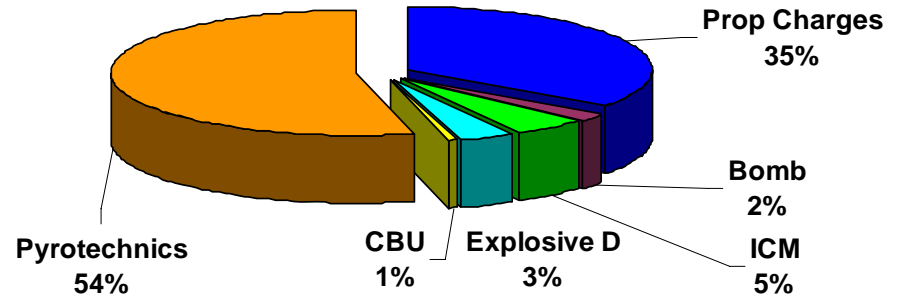
50,290 Tons / 1,782,629 Units

Distribution by Tonnage

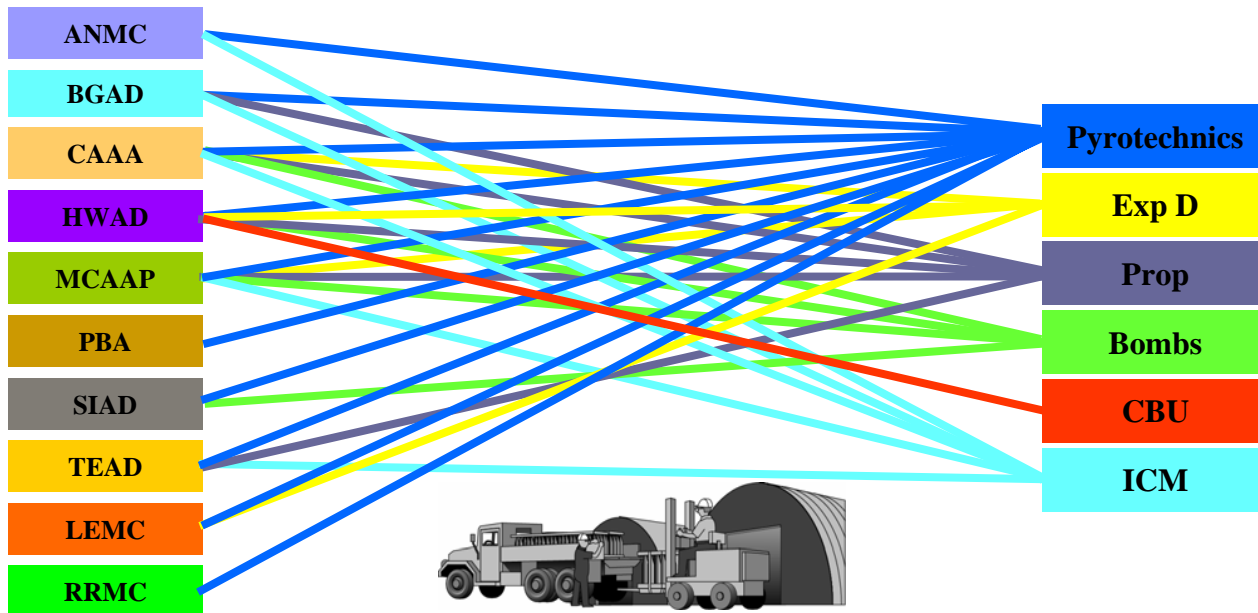
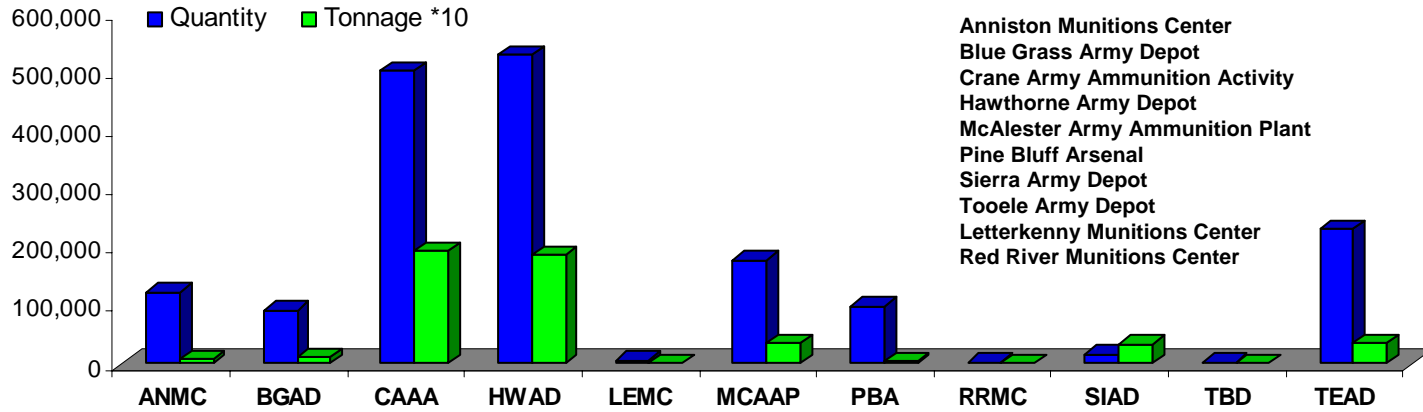


Demil Families	Quantity	Tonnage
Prop Charges	622,977	16,906
Bombs	35,723	17,956
ICM	91,066	4,967
Explosive D	62,307	3,686
CBU	9,033	4,481
Pyrotechnics	961,523	2,294
Total	1,782,629	50,290

Distribution by Quantities

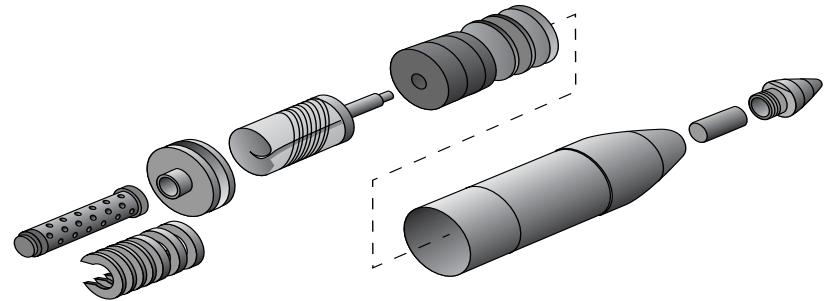


Storage Facilities - Quantity and Tonnage



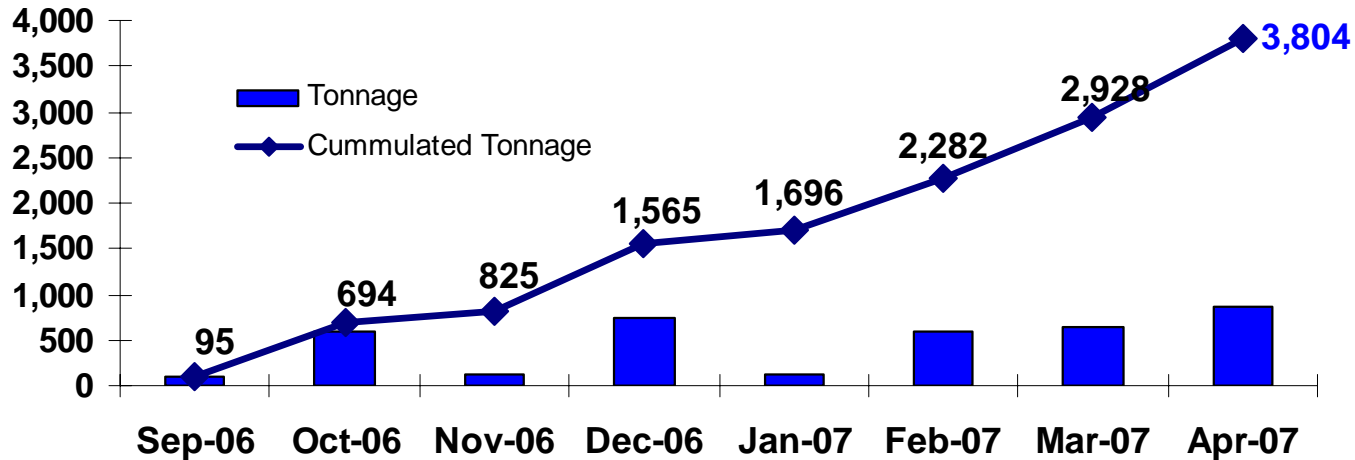
Demil Start-up Challenges

- 6 different Demil families with 4 Sub-Families
- 44 different DODIC's and Ammunitions Types
Only 7 identical types from last IDIQ contract
- 6 Explosives Safety Site Plans for Storage and Operations Sites
- 14 different Demil Operations and Demil Plans
- Three new Demil lines needed design, development and prove-out

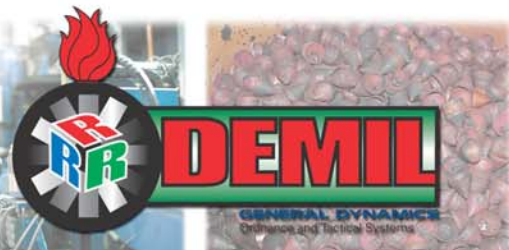


Bomb Demil Line

ID	Task Name	Start	2006			2007				2008		
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1	Program Start	Mon 7/3/06		7/3								
2	Explosive Site Safety Plan Approval	Tue 8/8/06		8/8								
3	Production Startup	Tue 9/5/06		9/5								
4	GD Walkthrough	Thu 9/7/06		9/7								
5	JMC Walkthrough	Tue 11/28/06				11/28						
6	F114 750lb Bomb Demil	Tue 9/5/06	9,357 units completed									
7	F480 500lb Bomb Demil	Mon 10/1/07										
8	F127 and F272 2000lb Bomb Demil	Mon 8/6/07										



- 3 different Types of Aircraft Bombs under Contract for Demil
- Two different lines are utilized at MCAAP for 500/750 lbs and 2000 lbs Bombs
- Resource Recovery Rate is 98.5%



Bomb Demilitarization Line



Receiving



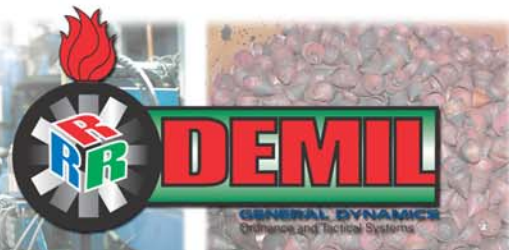
Storage



Steam Soften Asphalt Liner



Cut Nose Fuze Well Conduit



Bomb Demilitarization Line



Remove Asphalt Liner



Melt Out Explosive



Tritonal Flaker



Visual Inspection

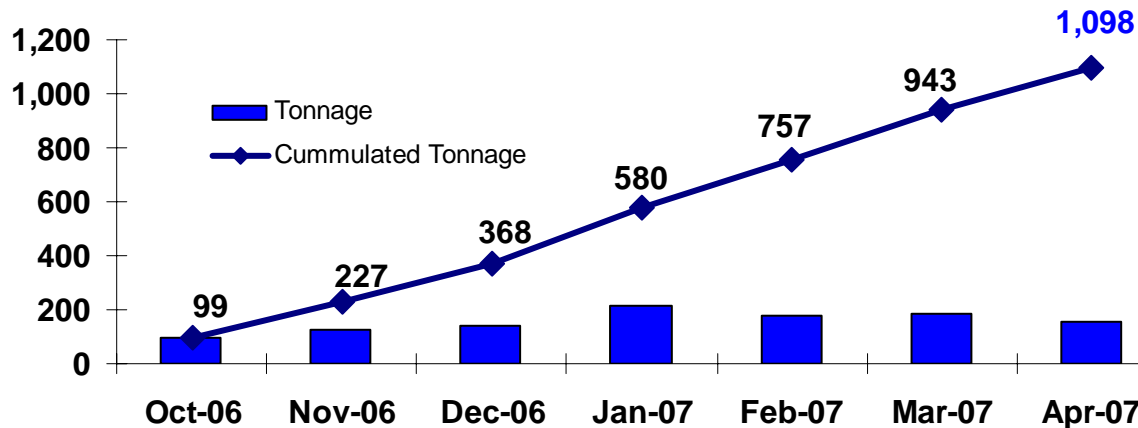


Tritonal Packaging

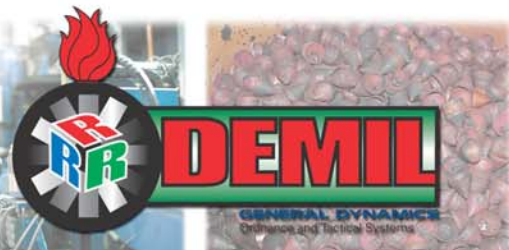


Explosive D Demil Line

ID	Task Name	2007				2008				2009				
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1	Explosive Site Safety Plan Approval		8/7											
2	Production Startup			10/30										
3	GD Walkthrough - Gradient Tech			11/2										
4	JMC Walkthrough - Gradient Tech				1/30									
5	D235 5 Inch													
6	D330 5 Inch													
7	D394 6 Inch													
8	D400 6 Inch													
9	D401 6 Inch													
10	D406 6 Inch													
11	D631 8 Inch													



- Seven different DODIC's of 5", 6" and 8" Explosive D Projectiles are under Contract
- Two different Demil Operations at Gradient/Crane and Nammo will be utilized
- Resource Recovery Rate is 99.9% for Gradient/Crane



Explosive D Demil



5"/38 HE Shell



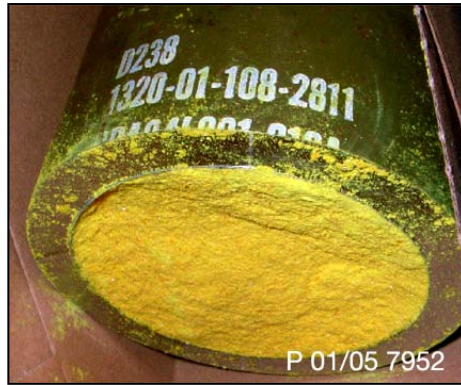
Wash-out Station



Fuze Cut-out



MK 29 Fuze



Explosive D in 5" round

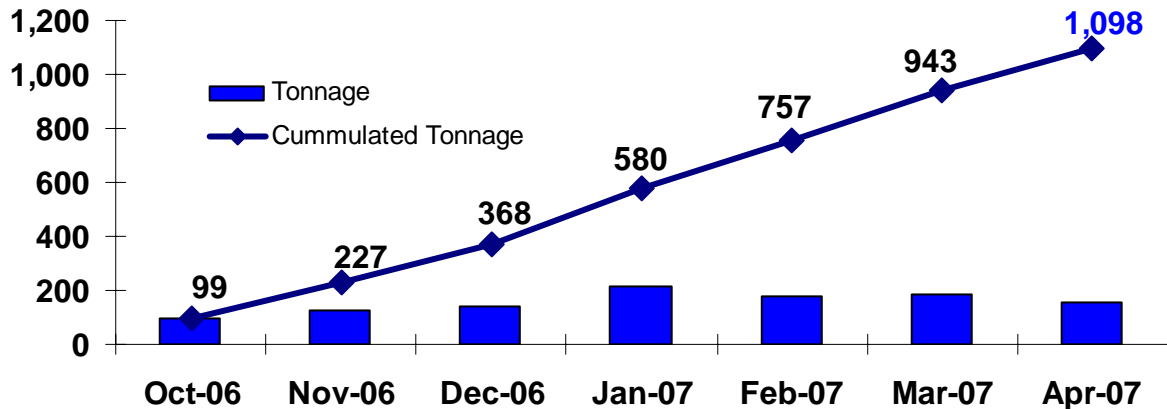


Fuzes cut out by Water Jet

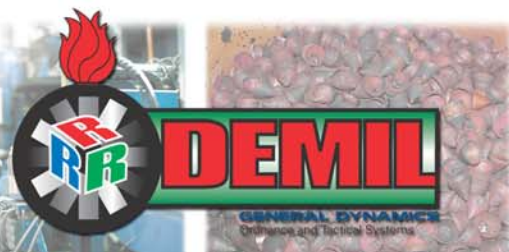


ICM M483 Demil Line at EBV EEC

ID	Task Name	Start	2006			2007			
			Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Program Start	Mon 7/3/06		7/3					
2	Explosive Site Safety Plan Approval	Tue 9/26/06			9/26				
3	Production Startup	Wed 10/4/06			10/4				
4	GD Walkthrough	Tue 10/10/06			10/10				
5	JMC Walkthrough	Wed 11/29/06				11/29			
6	D563 ICM	Tue 10/10/06							20,093 units completed



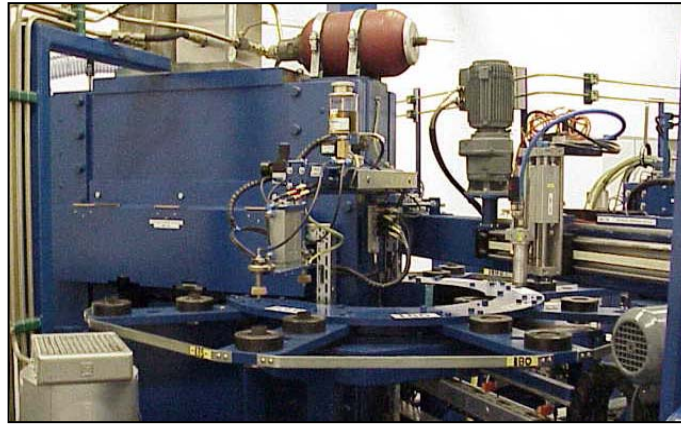
- Line improvements increased productivity by 20%
- Additional improvements are currently in progress
- Resource Recovery Rate for M483 is 96%



ICM Demil Operation at EBV EEC



Removal of Base Plate



Automated Copper Cone Removal



Fuze Locking Station



RKI Feed Room



Rotary Kiln Incinerator

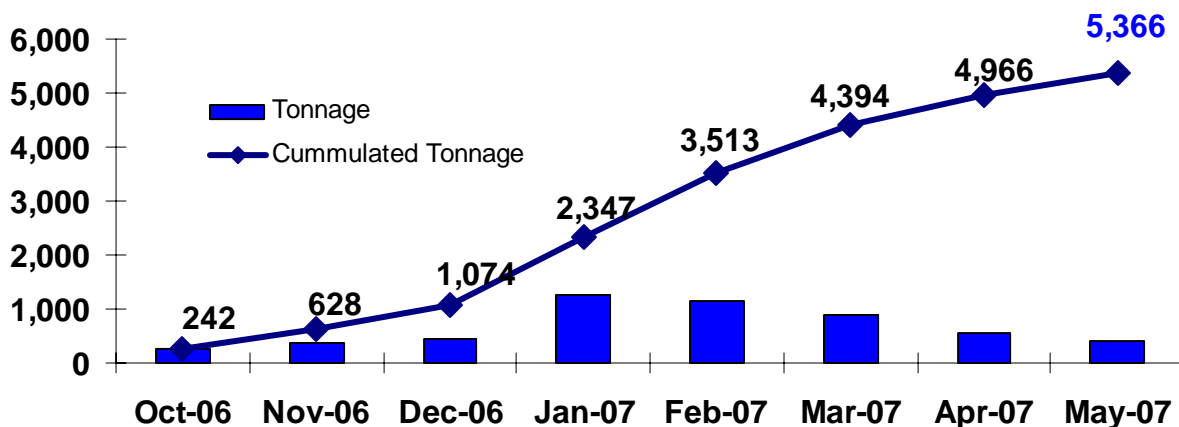


Recovered Cu Cones

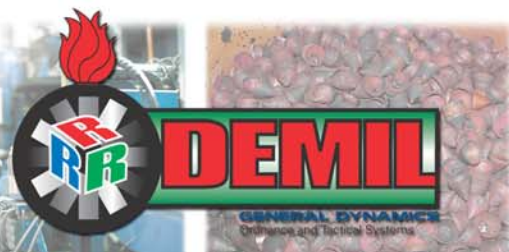


Propelling Charges Demil Line

ID	Task Name	Start	2006			2007				20			
			Q2	Q3	Q4	Q1	Q2	Q3	Q4		Q1	Q2	
1	Program Start	Mon 7/3/06		7/3									
2	Explosive Site Safety Plan Approval	Tue 8/8/06		8/8									
3	Production Startup	Wed 10/4/06			10/4								
4	GD Walkthrough - IOW Prop Charges	Thu 10/12/06			10/12								
5	Demil Production Prop Charges	Wed 11/1/06							278,719 units completed				



- 11 different DODIC's of Propelling Charges under Contract
- Resource Recovery Rate is 99.9%



Propelling Charges Demil



Receiving Propelling Charges



Removal from Packaging



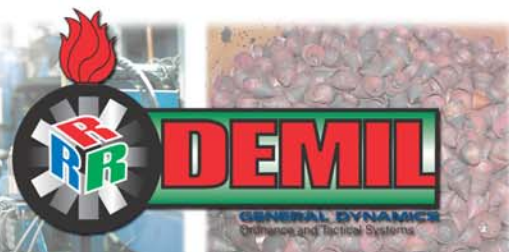
Residual Stabilizer Analysis



Removal Propellant from Bag

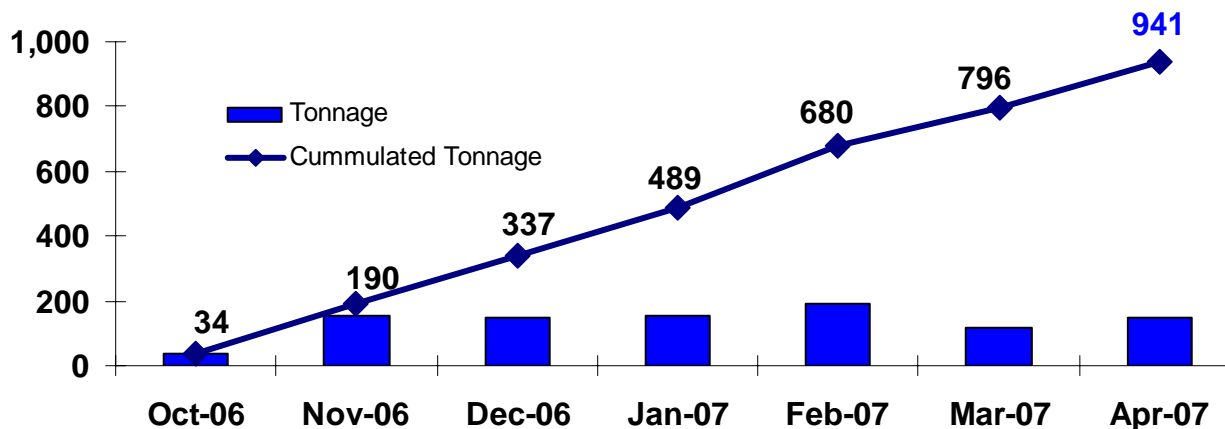


Inspection and Packaging of Propellant for Reuse



Pyrotechnics Demil Line

ID	Task Name	Start	2006			2007			
			Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Program Start	Mon 7/3/06		■ 7/3					
2	Explosive Site Safety Plan Approval	Tue 9/26/06			■ 9/26				
3	Production Startup	Wed 10/4/06			■ 10/4				
4	GD Walkthrough Direct Thermal Treatment	Tue 10/10/06			■ 10/10				
5	JMC Walkthrough Direct Thermal Treatment	Wed 11/29/06				■ 11/29			
6	GD Walkthrough Disassembly Items	Tue 2/20/07					■ 2/20		
7	JMC Walkthrough Disassembly Items	Wed 4/4/07						■ 4/4	
8	Demil Production Pyrotechnics Items	Wed 10/4/06							



- 17 different DODIC's of Pyrotechnics Items under Contract
- 5 different Demil Process Lines
- Pyrotechnics for Base and Option 1 will be completed by 3rd Quarter 07
- Resource Recovery Rate is 57.7%



Pyrotechnics Demil Line



Receiving Inspection



Disassembly



Cutting Flares



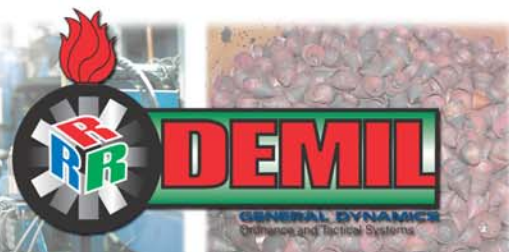
Unpacked Rounds



Inspection



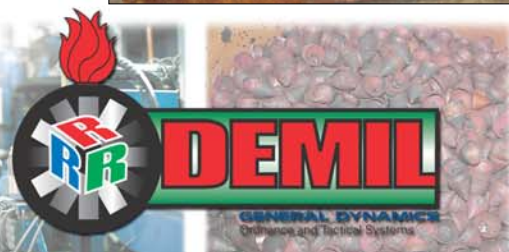
Recovered Metals for Recycling



CBU Demil Line

ID	Task Name	Qtr 3, 2006			Qtr 4, 2006			Qtr 1, 2007			Qtr 2, 2007	
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	CBU Operations	[Timeline bar from Jul to May]										
2	Project Start / Initial Design		8/3									
3	Preliminary Design Review at SAB Germany			9/20								
4	Manufacture Test Equipment			9/21								
5	Engineering Tests at EBV					10/27						
6	Critical Design Review					11/3						
7	Manufacture Equipment					11/6						
8	Equipment Prove-Out at SAB Germany							1/8				
9	Building Construction								1/29			
10	Installation of Equipment at EBV										4/2	
11	Low Rate Production and Ramp-up											4/16
12	Production											4/30

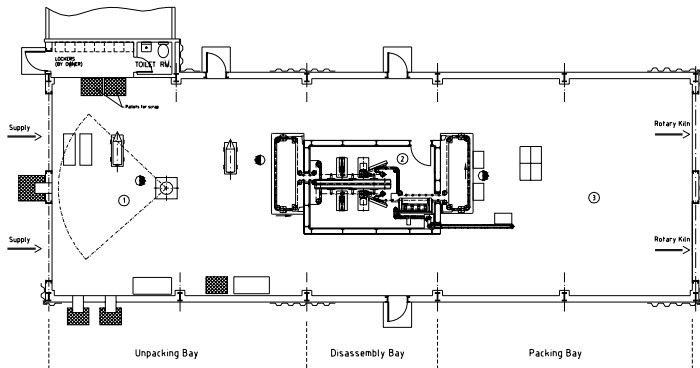
- **Cluster Bombs are a new Demil Family for Commercial Demil**
- **Approximately 50,000 units are in the Demil stockpile**
- **Disassembly equipment was specifically designed to safely separate Bomblet Halves and remove the Fuzes**
- **Design, Testing and Prove-out was an application of available technology and effective engineering to provide a safe and effective solution in minimum time**



CBU Demil Line



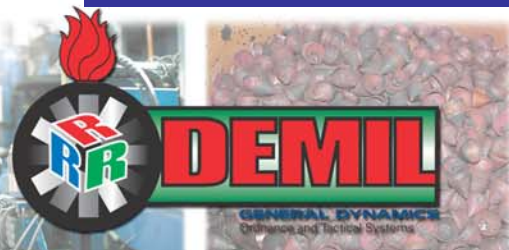
Eight months from Concept to Full Operations



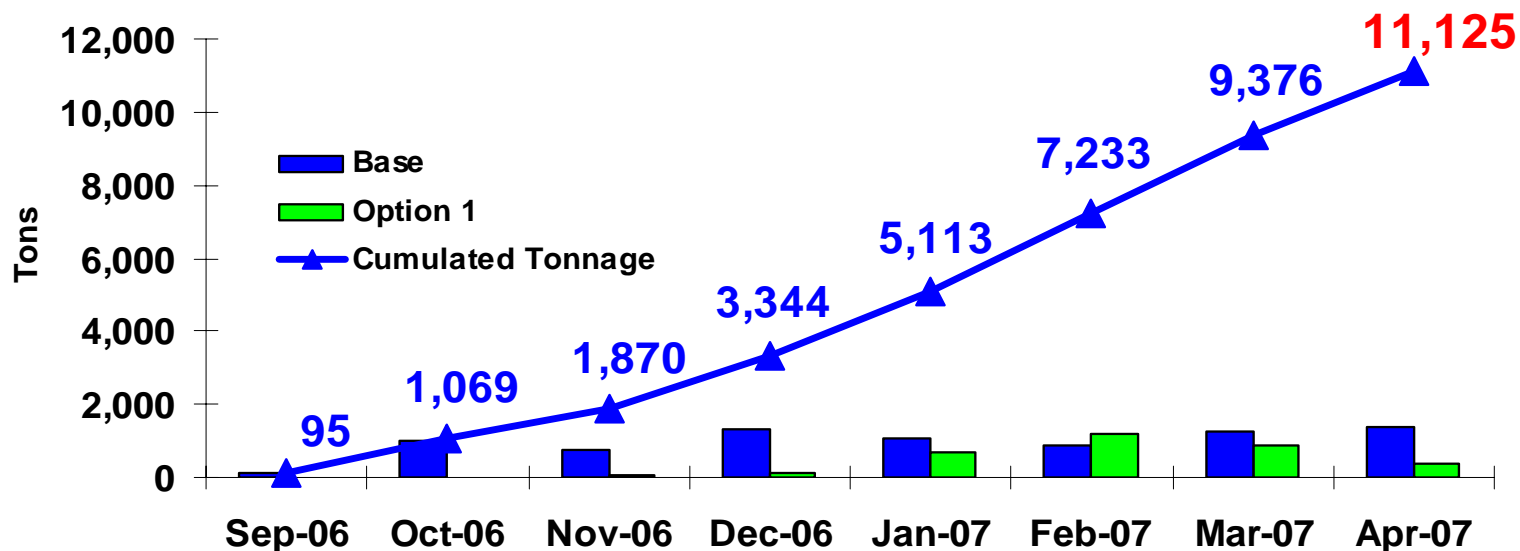
Program Overall Status Summary

	ICM	Pyrotechnics	CBU	Explosive D	Propelling Charges	Bombs
Mod/Asset List	[Green]					
Site Safety Plan	[Green]					
Asset Status	[Green]					
Delivery Schedule	[Green]					
Delivered to Demil Site	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Demil Plan	[Green]					
GD-OTS approved	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
JMC approved	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Quality Plan	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Walk-Through	[Green]					
GD-OTS	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
JMC	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Demil	[Green]					
Production Start-up	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Full Rate	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Post Demil Processing	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]
Resale of Metals/Energetics	[Green]	[Green]	[Green]	[Green]	[Green]	[Green]

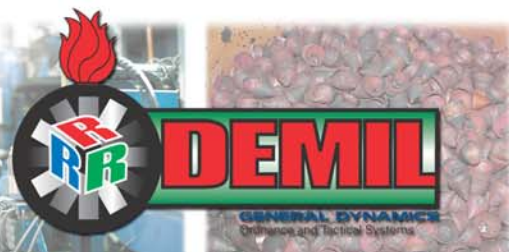
	Criteria
Green	Activity on track with all concerns addressed
Yellow	Concern identified potential recovery plan being developed
Red	Potential contract milestone miss



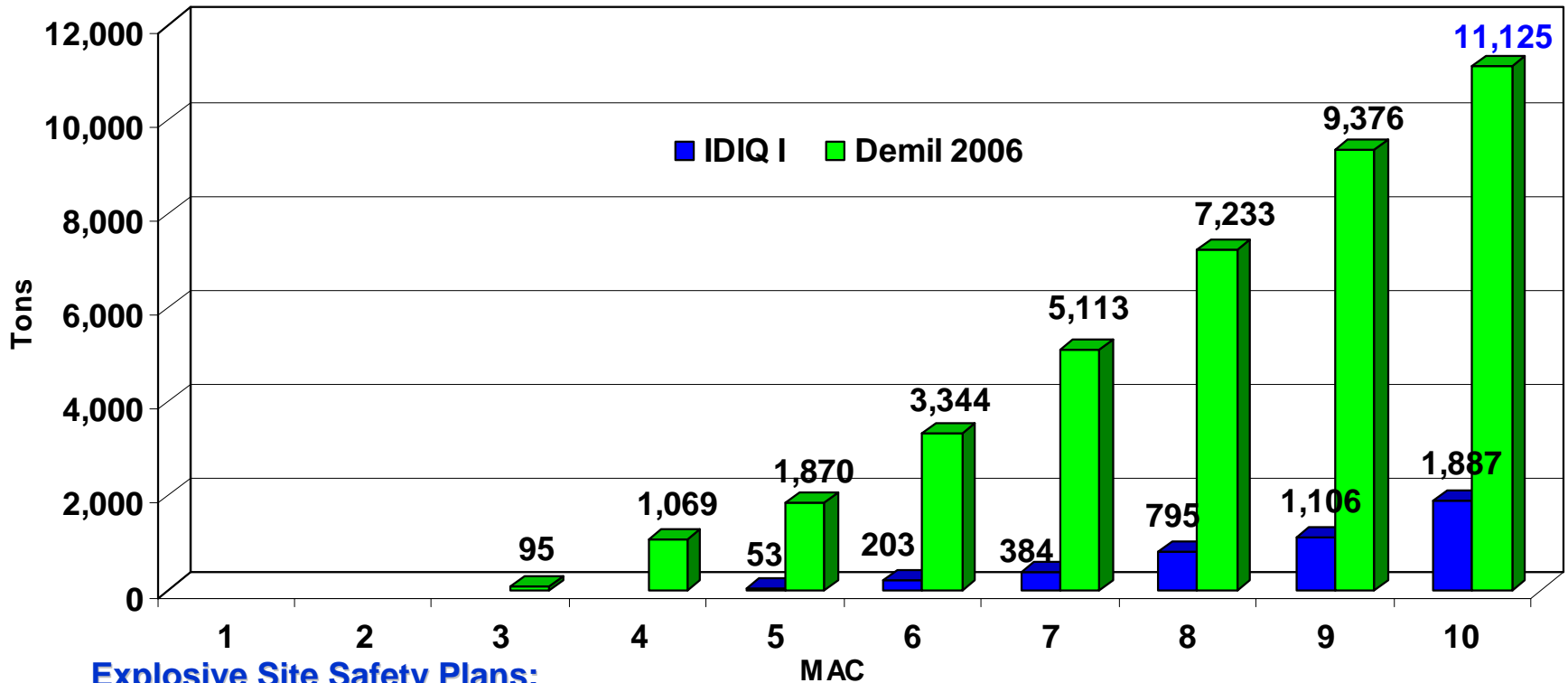
Demil Summary first 10 Months



- Pyrotechnics will be finished more than 12 month ahead of original schedule
- New line for CBU's was set-up in time and will finished ahead of schedule
- Propelling Charges are 2 months ahead of schedule
- Explosive D, Bombs, and ICM's are on schedule
- Overall Resource Recovery and Recycling Rate R³ is 94.8%
- More than 20% of awarded tonnage is complete



Demil 2006 vs IDIQ Start-up Comparison by Tonnage



Explosive Site Safety Plans:

All 6 Site Plans at Operations and Storage Sites have been accepted by JMC

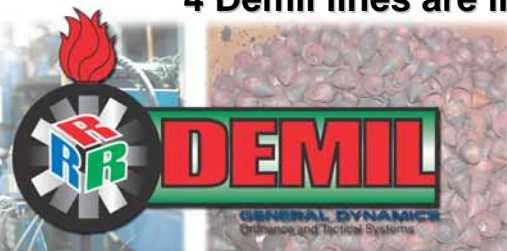
Demil Plans:

8 of the 14 Demil Plans for different Demil Operations and Ammunition types have been accepted by JMC

Demil Operations:

10 of the 14 different Demil lines are running at low/full-rate production

4 Demil lines are in the set-up mode



Up-coming Program Events

- **Fine-tune new CBU Demil Line at EBV**
- **Start-up of ICM and Explosive D 5" Demil Line at Nammo NAD in June 07**
- **Start-up of a new 2,000 lbs Aircraft Bomb Demil Line at MCAAP in Aug 07**

