Anniston

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

Anniston Army Depot
Installation Familiarization Reference Book
For: Elizabeth Bieri and George Delgado
June 2005

Anniston Army Depot

ANNISTON ARMY DEPOT
WEAPONS ◆ COMBAT VEHICLES ◆ AMMUNITION

Presented to:

Ms. Elizabeth Bieri
Mr. George Delgado

Base Realignment and Closure Committee Staff
Department of Defense
23 June 2005

Committed to Excellence

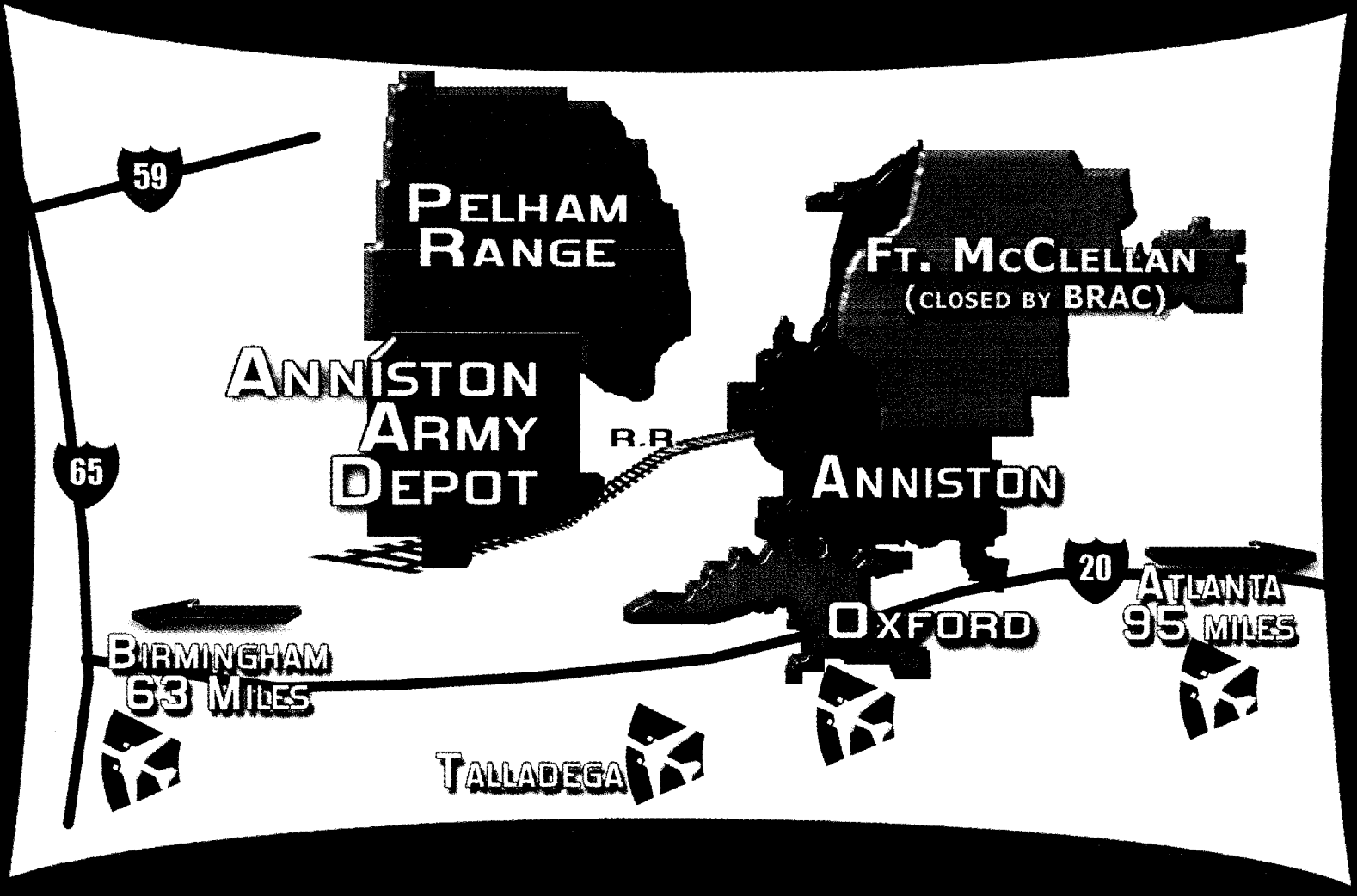
Purpose

To Demonstrate Anniston Can Implement DoD BRAC05 Recommendations Without Impact to Readiness

Outline

Depot Overview
Workload
Financials/Personnel
LEAN/ 6 Sigma
Partnering
BRAC History
BRAC 05 Workload Transition
Conclusion

Strategic Location & Deployment Network



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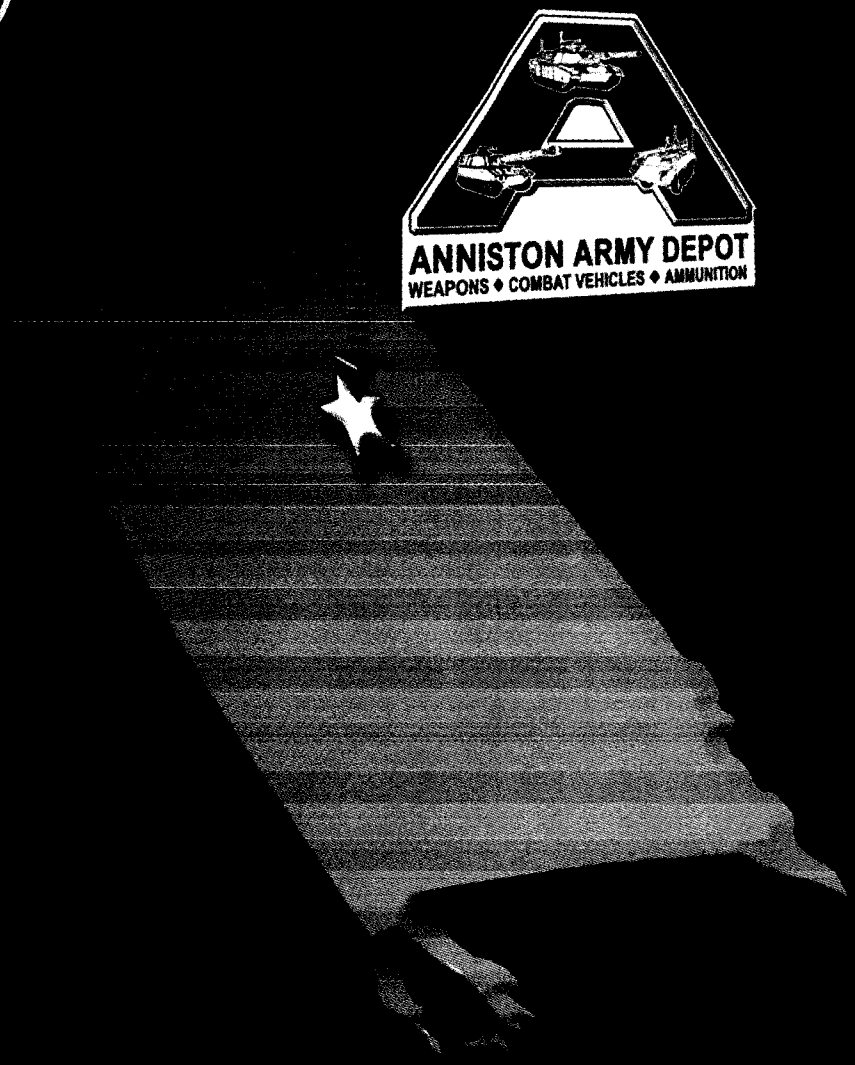
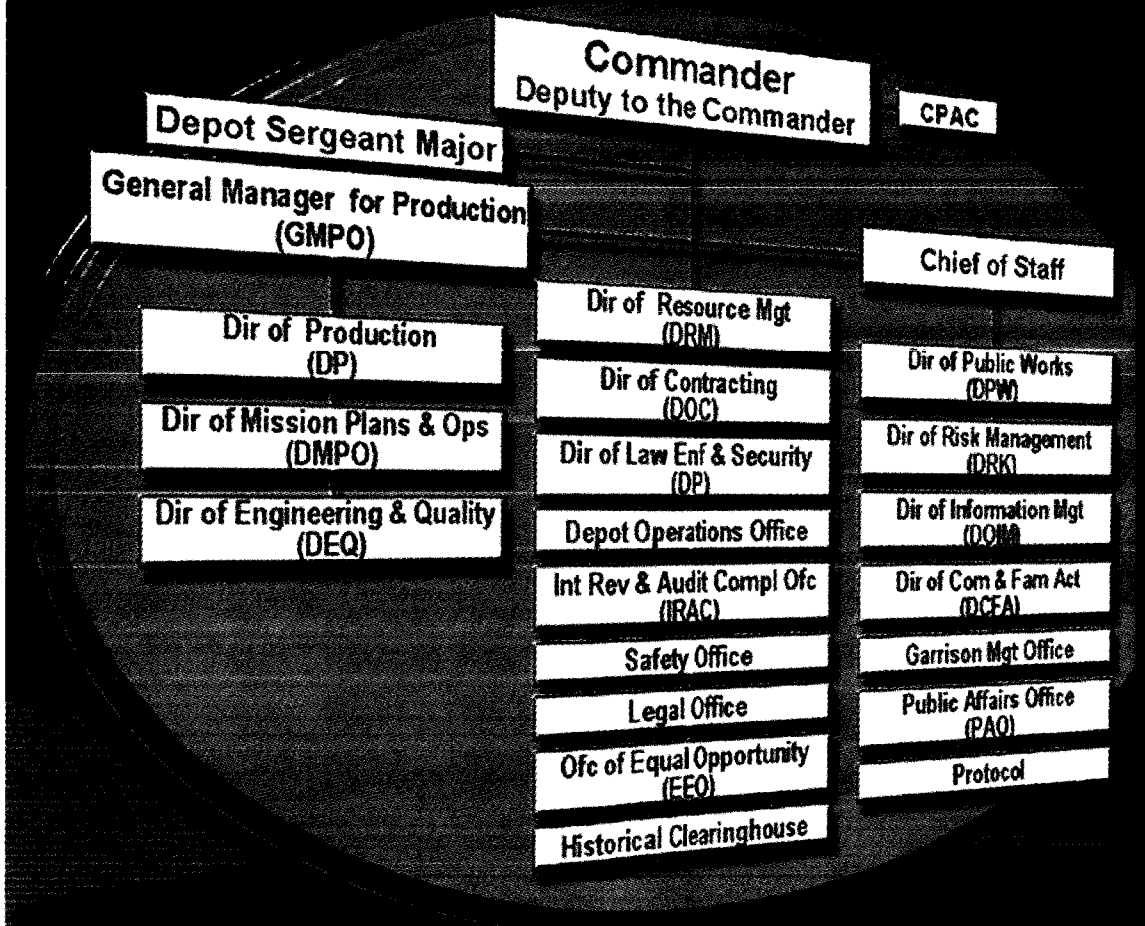
Installation Description



- 1,779 Bldgs/Structures
- 244 Miles of Roadway
- 93 Miles of Fencing
- 46 Miles of Railroad
- 15,243 Acres
- $1.6 Billion Plant Replacement Value
- $1,030M FY05 Depot Budget
- $680M Average Annual Tenant & Contractor Budget
- 5,656 Total Employees
- 3,682 Depot Employees
- $268M Depot Payroll

Installation Mission Organization & Tenants

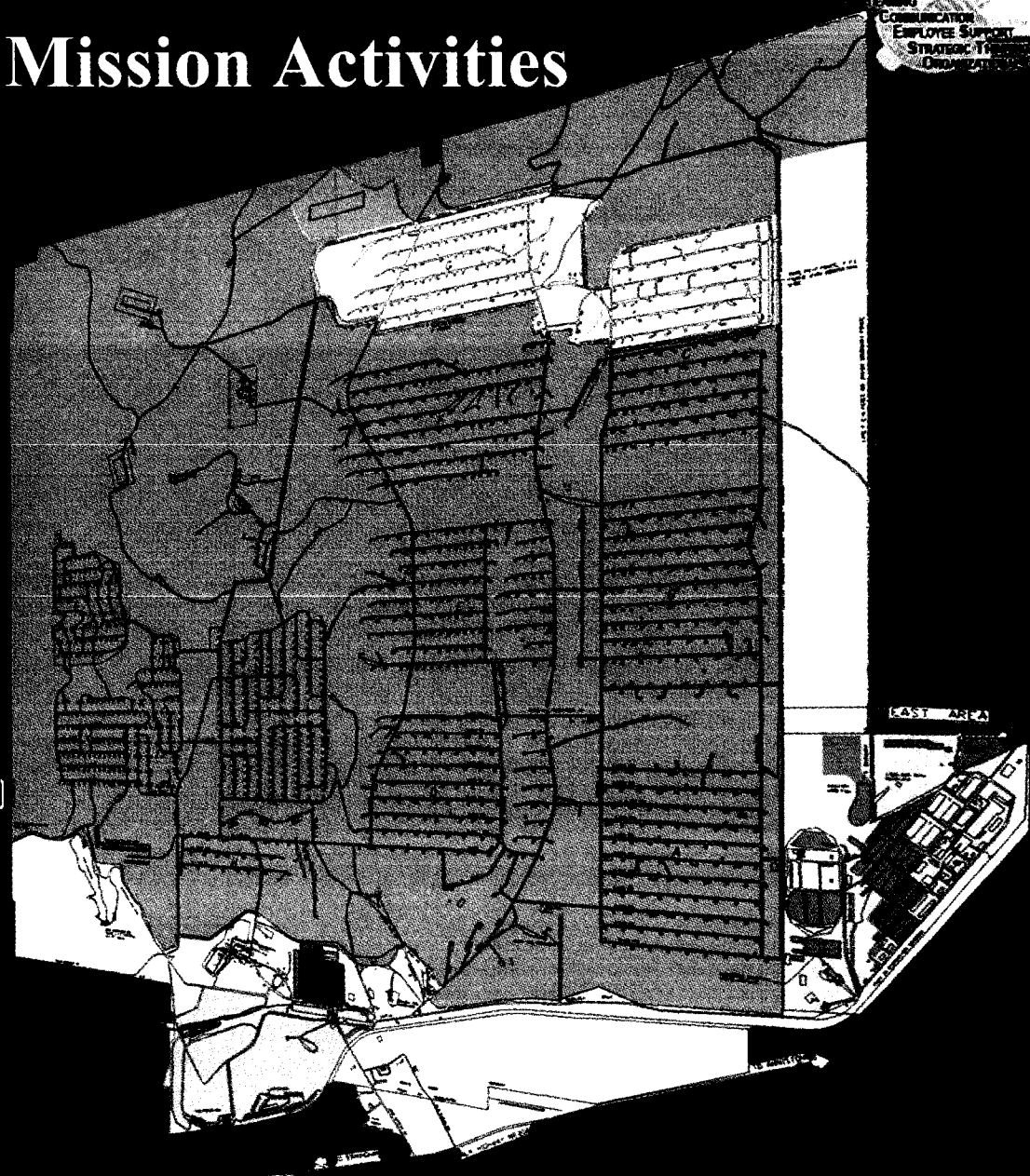


MAJOR TENANTS:

- Anniston Defense Munitions Center (ADMC)
- Anniston Chemical Activity (ANCA)
  - Anniston Chemical Agent Disposal Facility (ANCDF)
- Defense Distribution Depot Anniston, Alabama (DDAA)
- Dear Clinic – MEDDAC
- Defense Reutilization & Marketing Office (DRMO)
- U. S. Army Center of Military History - Clearing House
- USA Test, Measurement & Diagnostic Equipment (TMDE) Support Center
- 722nd Ordnance Company (EOD)
- Ten Other Tenants

Installation Mission Activities & Tenants

- TACOM-Anniston Army Depot (ANAD)
- Anniston Chemical Agent Disposal Facility (ANCDF) /Chemical Materials Agency (CMA)
- Anniston Chemical Activity (ANCA)
- Anniston Defense Munitions Center (ADMC)
- Defense Distribution Depot Anniston (DDAA)



INTERDEPENDENT MULTI-MISSIONS

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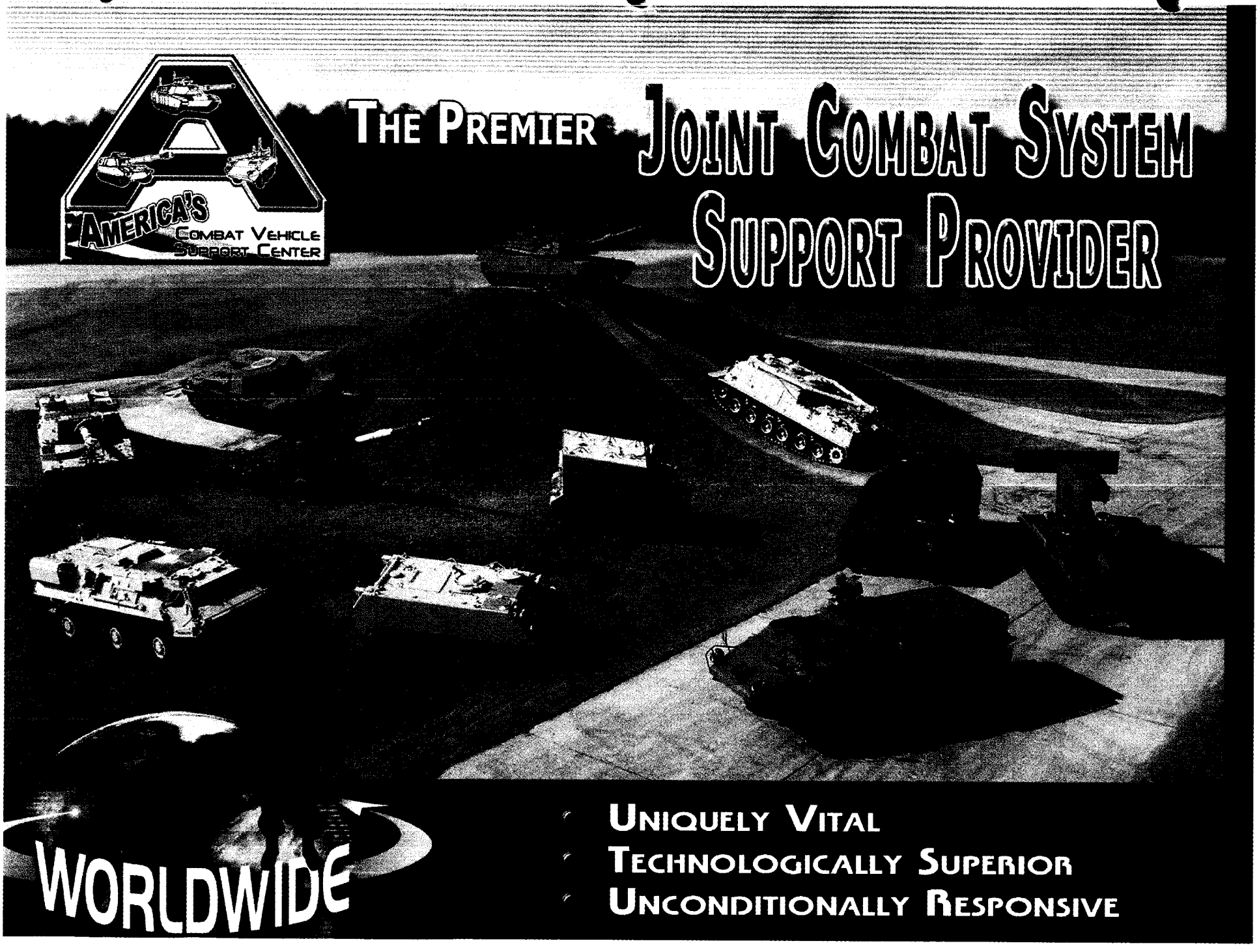

America's Combat Vehicle Support Center
The Premier Joint Combat System Support Provider
Worldwide
Uniquely Vital
Technologically Superior
Unconditionally Responsive

Mission

To Provide Industrial & Technological Support for Current & Future Ground Combat Systems

To Equip & Sustain Joint Warfighters & Allies

To Employ a Highly Skilled, Ready, & Responsive Workforce

To Utilize Innovative, State-of-the-Art Processes & Infrastructure

To Maximize Use of Prototypes, Technology Insertion & Partnering Initiatives

And to Become...

Anniston
AMERICA'S
COMBAT
VEHICLE
SUPPORT
CENTER

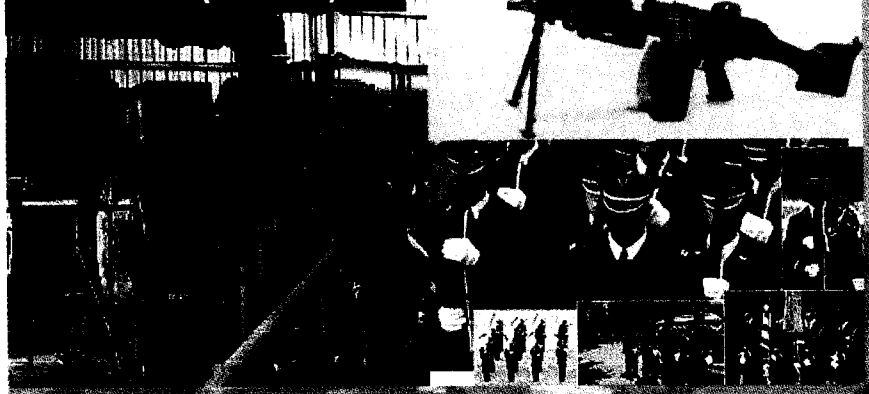
Workload Update

America's Combat Vehicle Support Center

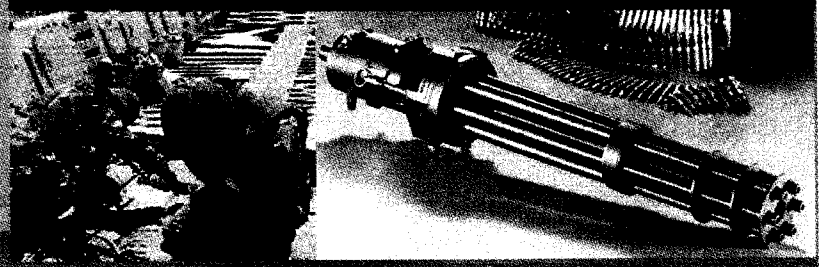
Committed to Excellence –
Supporting America's Warfighters

Joint Service Workload

United States Air Force (USAF)



United States Navy (USN)



Total Support To The Joint Warfighter

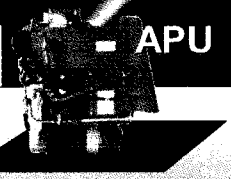
Army Reserve (AR)

United States Marine Corps (USMC)

National Guard (NG)

Full Spectrum Support

Example:



APU

Turbine Engine

Engines	Generator (11 HP)	6-V (275 HP)	8-V (400 HP)	1790(12-V) (750 HP)	Turbine (1500 HP)

Fighter Aircraft/ Aerospace Technology in a Ground Combat System

Weapons Systems

Armored Personnel Carrier	Towed Howitzer	Recovery Vehicle	M60 Bridge Launcher	70 Ton Bridge Launcher	Self Propelled Howitzer	Stryker	M1

- Turbine
- Electronics
- Pneudraulics
- Laser
- Thermal

Anniston *has the*

Infrastructure, Technology

and

to Perform

- Heaviest to Lightest
- Largest to Smallest
- High to Low Technology

Within the shops of Anniston,

a Cadre of Highly Skilled Technicians Are Trained & Exercised Daily Across the Full Spectrum of Weapon Systems & Technologies...

...Ready for Immediate Deployment & Capable of supporting these DoD Combat Vehicles

FY 04/05 Workload

Executed DLH
- FY01 – 2.4M
- FY02 – 2.9M
- FY03 – 3.2M

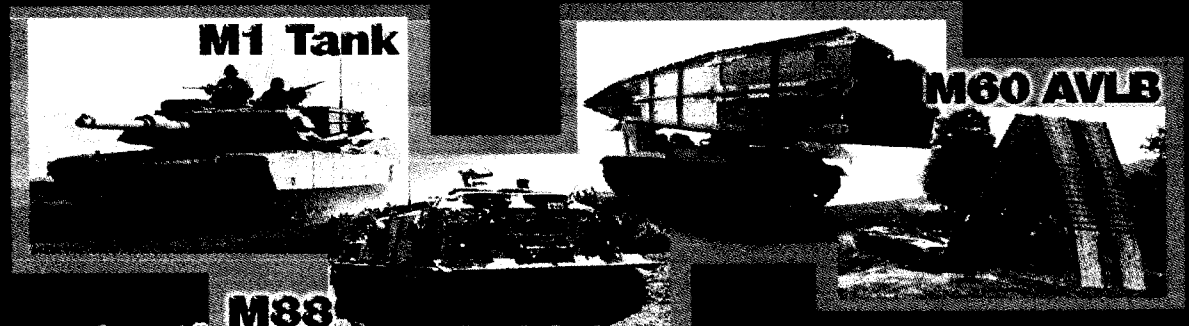
Whrs (M)

	FY04	FY05*
New Order Base	3.781	6.589
Total Projected	5.192	7.828
Execution	3.965	5.515
Residual	1.277	2.313
Equivalent Months	3.4months	5.0months

* Includes Potential .5M MHRS Contractor Execution

Combat Vehicle *Programs*

ITEM	PROGRAM QTY Total FY04	RESET FY04	Total FY05	RESET FY05	Accelerated Production
M1A2 SEP	37	8	189	58	
M1A1 AIM	125		179		
M1A1 OVERHAUL	64		144	20	
M88A1	103	34	319	108	38
M60A1 AVLB	23	17	23	16	
ABV (Assault Breacher Vehicle)	3		1		

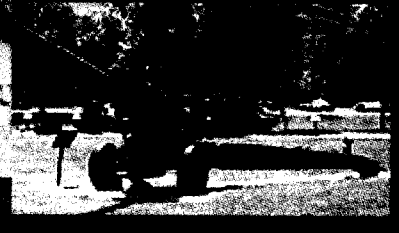


Combat Vehicle *Programs* Cont'd

ITEM	PROGRAM QTY Total FY04	RESET FY04	Total FY05	RESET FY05	Accelerated Production
M113 FOV Partner	92		326	0	
M113 FOV ORGANIC	14		172	172	
Main Battle Tank	24		18		
M9ACE	78	28	65	22	14
FAASV	52	18	36	0	
M109 Paladin	20	20	31	31	12
M198 Howitzer	18		28		

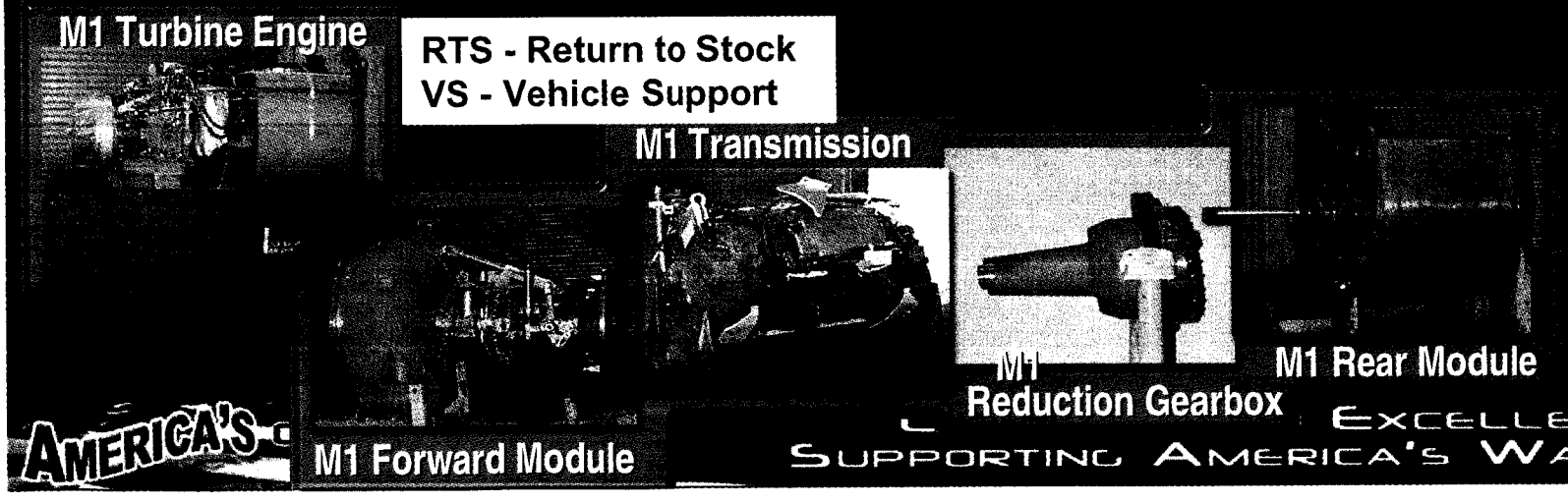
M113 Family

M9ACE


M198 Howitzer

Subassembly *Programs*

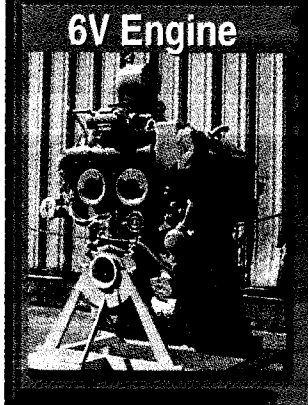
ITEM	PROGRAM QTY Total FY04	RESET FY04	Total FY05	RESET FY05	Accelerated Production
M1 Turbine Engine (RTS)	533		805		100
M1 Turbine Engine (VS)	226	8	512	78	
M1 Rear Module	117		11		
M1 Forward Module	56		7		
M1 Transmission	220		415	60	
M1 Reduction Gearbox	39		110		



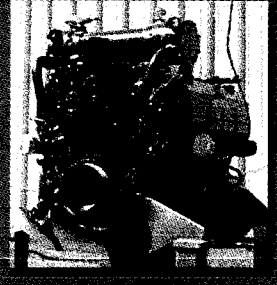
RTS - Return to Stock
VS - Vehicle Support

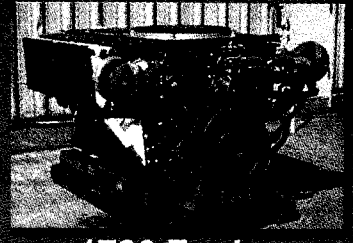
Subassembly *Programs* Cont'd

ITEM	PROGRAM QTY Total FY04	RESET FY04	Total FY05	RESET FY05	Accelerated Production
1790 Engine (RTS)	307		426		142
1790 Engine (VS)	126	51	342	124	38
6V Engine (RTS)	155		841		
6V Engine (VS)	14		172	172	
8V71T Engine (RTS)	171		179		
8V Engine (VS)	150	66	132	53	


6V Engine

8V Detroit


8V Cummins


1790 Engine

RTS - Return to Stock
VS - Vehicle Support

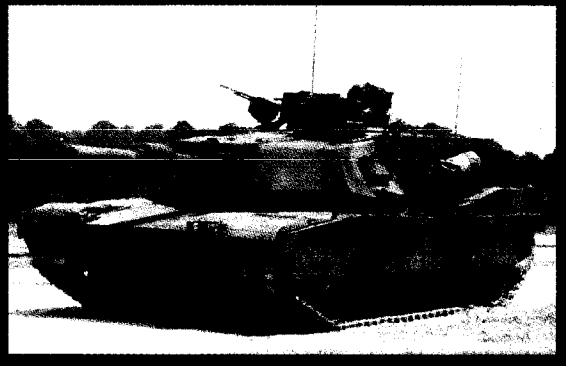
To Meet Surge Requirements ANAD went from 42 to 170 Personnel in 6 Months

Small Arms

ITEM	Total FY04	RESET FY04	Total FY05	RESET FY05	Accelerated Production
			PROGRAM QTY		
Launcher Grenade M203	2,890	2,390	1,059	860	47
Launcher Grenade	20	20	300	300	87
MG CAL50 M2 FLEX	1,587	1,440	8,648	8,528	
MG CAL 50 M2 HB FIXED	1,057	1,000	1,000	1,000	
MT TRI 7.62 MM M122	1,702	1,700	715	715	
MT TRI CAL 50 M3	1,415	1,300	656	656	
M16A2 Rifle	22,430	21,526	20,832	20,832	
M16A4 Rifle	539	539			
Rifle 5.56 MM M4			1,416	1,416	416
Squad Auto Wpn	2,038	1,000	2,689	2,629	
Pistol 9MM	15,269	15,133	3,311	3,311	
M240			839	839	
M240B	457		500	500	
M240C	149		867	867	
TOTAL	49,553	46,048	45,411	42,453	

Marine Corps Workload

M1A1 Overhaul

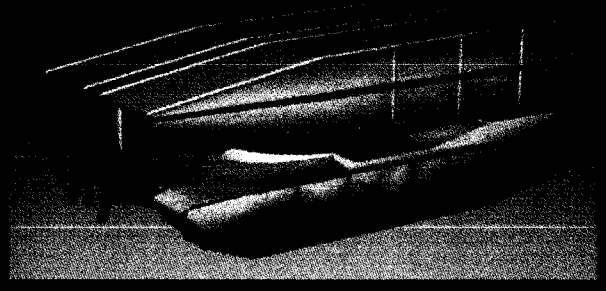


FY03 – 16 Vehicles
Completed - Sep 03
FY03 – 46 Vehicles
Completed - FY04
FY04 – 8 Vehicles
Completed - FY04;
56 Vehicles Carried into FY05
FY05 – 124 Vehicles
FY06 – 17 Vehicles
FY07 – 74 Vehicles

Assault Breacher Vehicle (ABV)

FY03 – 3 Programs
1 -Program Manager
1 -Tech Manuals
3 - Fab of ABV Turret
FY03 - ABV Overhaul
(Qty 3)
FY04 – FY03 Program Worked in FY04
(Program Complete)
FY05 – Full Production
(Qty 4; 1 New, 3 Overhaul)
FY06/FY07 – Qty 25

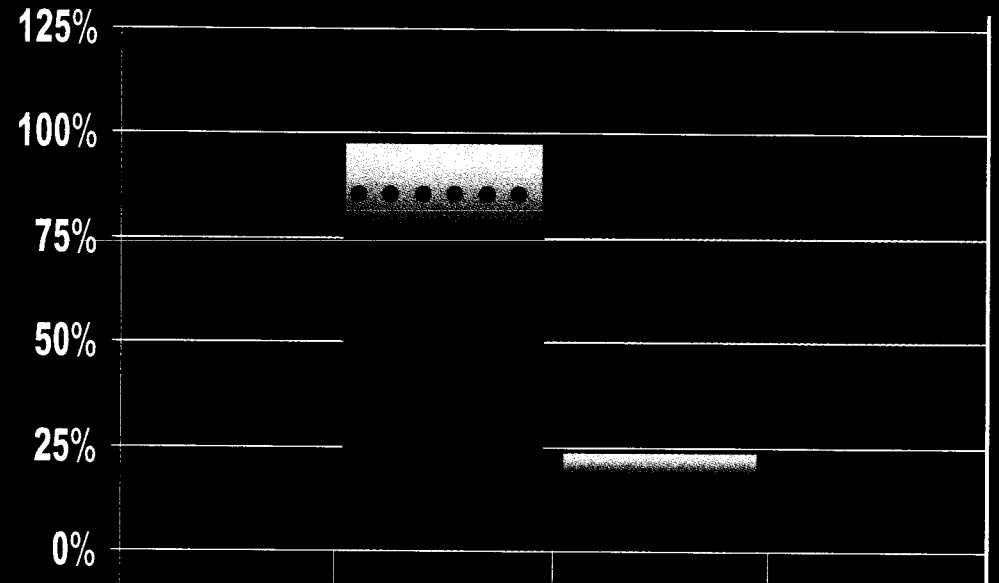
Expeditionary Assault Bridge (EAB)



FY05 – 1 Vehicle
FY06 – 3 Vehicles

Depot Maintenance Capacity/ Utilization FY05

- ≥ Ceiling
- < Ceiling



Goal 85%

	1st Shift	2nd Shift
Overtime	27%	7%
Reg Hrs	71%	17%

As of 30 Apr 05

Financial / Personnel Update

America's Combat Vehicle Support Center

Committed to Excellence – Supporting America's Warfighters

In the Last 4 Yrs. ANAD has Successfully Increased Production By 2.7 MDLH (125%) (COBRA Data Projects 2.2 MDLH Capacity to Transfer in BRAC05)

Mission Performance & Efficiencies

FY	Workload (Million Work-Hours) Planned	Actual	Net Operation Results (Profit)
2001	2.219	2.409	$ 15.1M
2002	2.443	2.971	$ 38.8M
2003	2.905	3.223	$ 40.7M
2004	3.910	3.965	$ 51.6M
2005	*4.992	*4.992	$ 10.5M**
TOTAL		$ 156.7M	

* Organic Workload
** Projected NOR

All Profits Returned to Customer Through Reduction in Future Year Rates

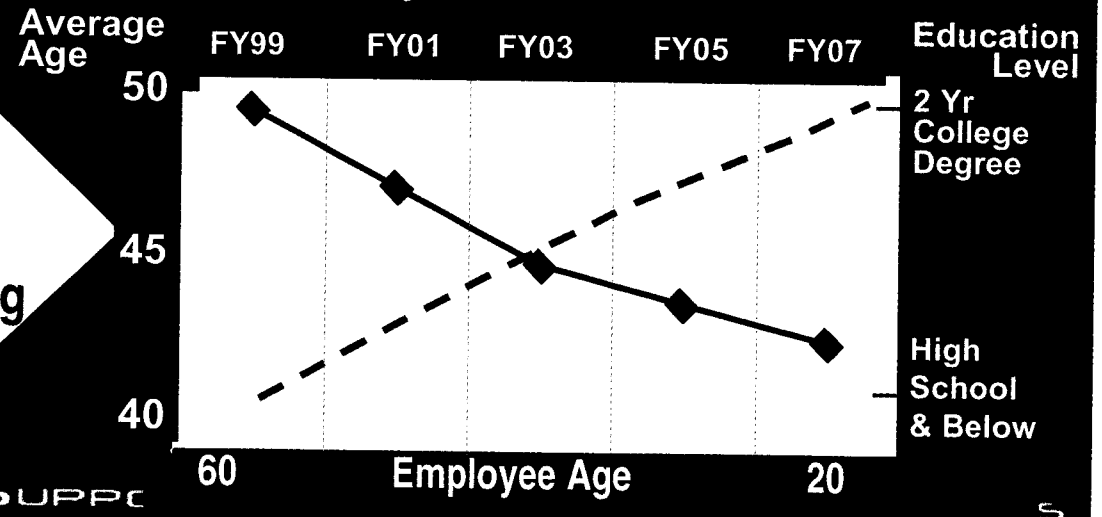
Workforce Revitalization

Mercedes
Co-Op Program
Modeled after ANAD

- On-Site Technical Education
- 70% of Students Received Technical College Scholarships
- 212 Students Now in Training or Full Time Employees
- 47 High Schools and 2 Technical Colleges In a 35 Mile Radius
- 6 State & 2 National Competition Winners
- 12 Students currently enrolled in the University Program
- 1,541 New Hires Since 2000
- Alabama Industrial Development Training (AIDT) Pre-Employment System Available

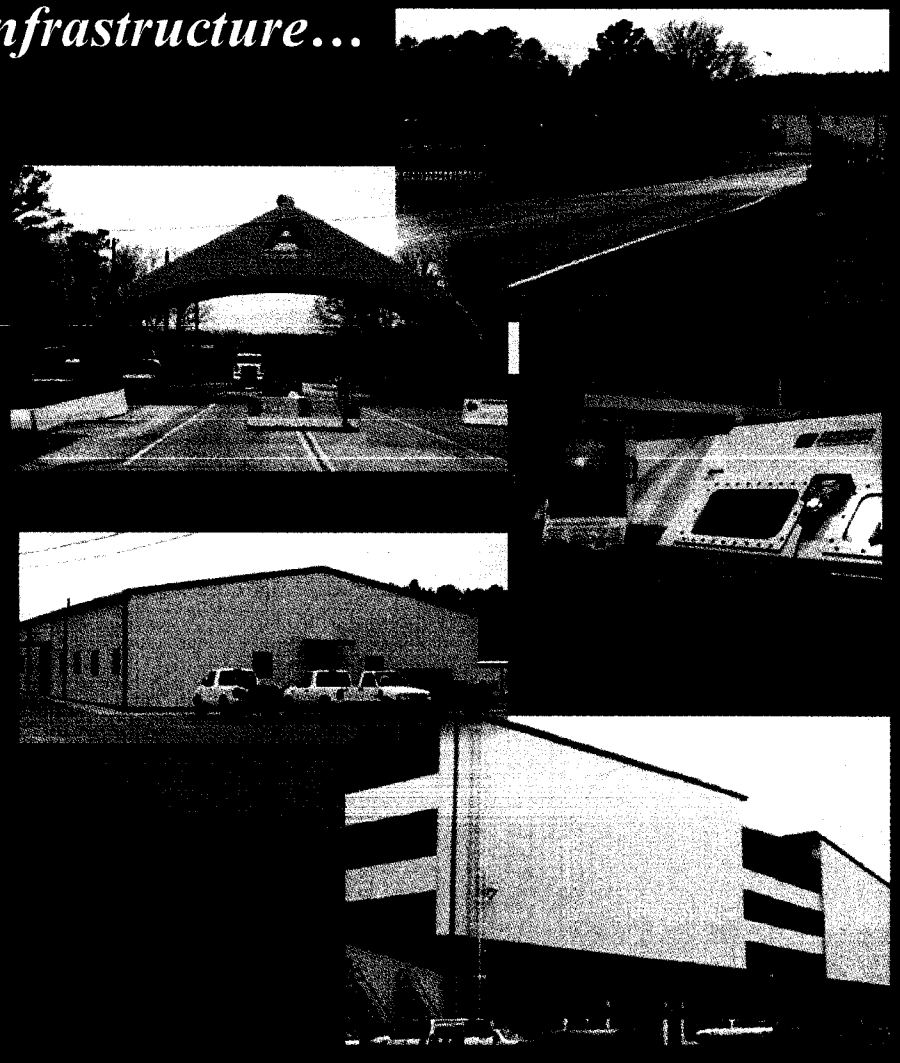
Bottom Line...

ANAD Workforce Average age is falling *while* Education Level is Climbing



Infrastructure Modernization

Mission Expansion
Will Be Within a Superior Infrastructure…



Industrial Mission Expansion Capabilities

Facility/Construction/ Renovation/Maintenance
$219 Million

Equipment Acquisition/ Replacement
$128 Million

Plant Replacement Value
$1.6 Billion

Improving Efficiencies

Thru

LEAN/Process Optimization Initiatives and Six Sigma Projects

LEAN/6 SIGMA Update

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

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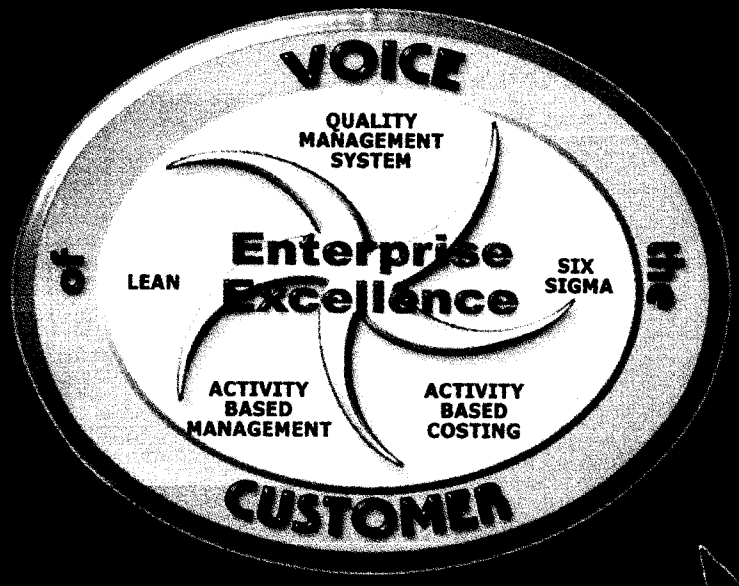
Toyota (TPS)

Motorola



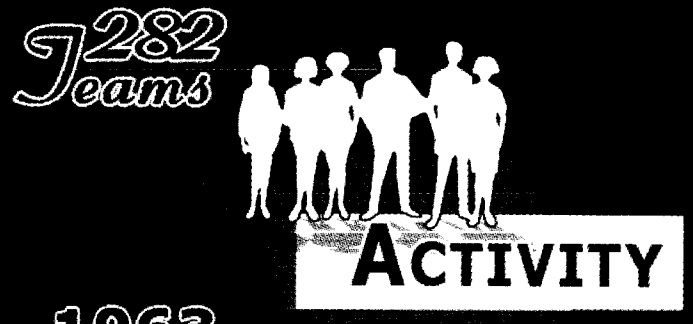
LEADERSHIP COMPETENCIES

EFFICIENCY

EFFECTIVENESS

ANNISTON BUSINESS SYSTEM

Process Optimization Initiative



1063
Team Members = 1503
Employees Affected

Cost Avoidance in FY04	$ 6.951M
Customer Savings in FY05	$10.80M
Projected Customer Savings in FY06-09	$60.10M

Six Sigma Implementation

CURRENTLY

1 Black Belt Project

10 Green Belt Projects

1790 Engine Quality Enhancement

Projected Savings
$1.82M

Public - Private Partnering

ANNISTON ARMY DEPOT
WEAPONS ◆ COMBAT VEHICLES ◆ AMMUNITION

America's Combat Vehicle Support Center

To Plan, Coordinate and Implement Marketing and Business Strategies Targeted at Private Industry, Major Commands and Other Services

Environment -
Past & Present

Competitive
vs
Cooperative

Service
Contractor

OEM

Independent

Public
vs
Private

OEM

ANAD

OEM

Best of
Both
Worlds

Protects
Organic/Private
Sector Core
Capabilities

Virtual
Business
Relationships

Common
Fence
Line

Reduction of
Total Combat
Vehicle
Infrastructure

Encompasses
Primary Elements
of Combat Vehicle
Industrial Base

SUPPORTS ARMY TRANSFORMATION

Government Accountability Office Reports

42 Total Army Partnerships
- 33% ANAD

88% of Total Private Sector Investment at ANAD

Highest Percentage of Partnership Workload

AIM XXI Program
- Recognized for Significant New Workload

AGT 1500 Recuperator Program
- Identified As Partnership Achieving Positive Results

ANAD Selected As Initial Study Site Due to Extensive Partnering Experience

---GAO-03-423, April 2003

Current Partnerships

Direct Sales

Opposing Forces Surrogate Training System	United Defense (UDLP)
FOX Upgrade	General Dynamics (GDLS)
Stryker	GDLS
Recuperator	Honeywell (HON)
Egyptian AGT 1500	Honeywell (HON)

Workshare

AIM XXI	GDLS
M1A2 SEP (Retrofit & Reset)	HON/GDLS
M113 FOV	UDLP

Current Partnerships

Facility Use

United Defense

- M113 Test Track
- Main Battle Tank
- Israeli Mortar Carrier

Honeywell

- PROSE
- Recuperator
- Egyptian AGT 1500

General Dynamics

- Gunner's Primary Sight
- FOX Maintenance
- Stryker
- AIM/SEP

Projected Business Opportunities

Boeing	Reverse Engineering
General Dynamics Land Systems	Stryker Reset
VT Systems	AVLB Upgrade (Singapore Defense)
EG&G Mobility Center	M1A1, M882 Support
DRS Test & Energy Management, Inc.	Turret Trainers
DTI Systems, Inc.	On Board Vehicle Power
General Dynamics Armaments & Technical Products (GDATP)	XM8 Lightweight Modular Weapon System

ANAD BRAC History…

YEAR	GAIN-LOSS
BRAC 88	↓
BRAC 91	↑
BRAC 93	↓
BRAC 95	↑
BRAC 05	↑

RRAD Transfer BRAC95

6V53T Engine
M903 Engine
TX100 Transmission
X-200 Transmission
M9 ACE Steer Unit
M9 ACE Transmission

M113 Family of Vehicle

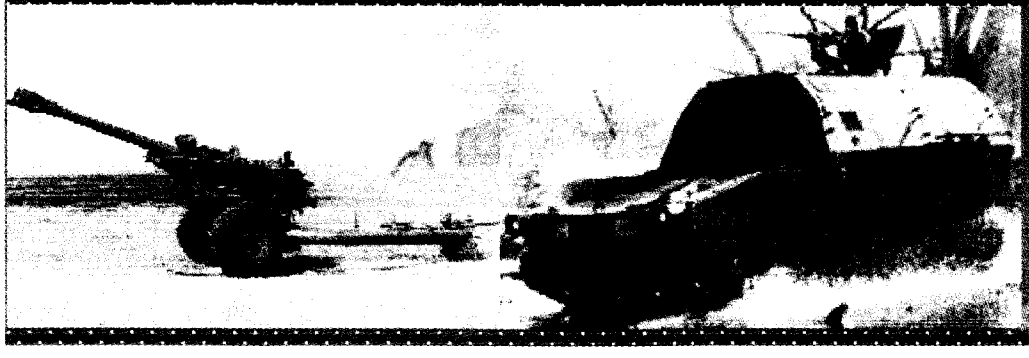
M9 Armored Combat Earthmover

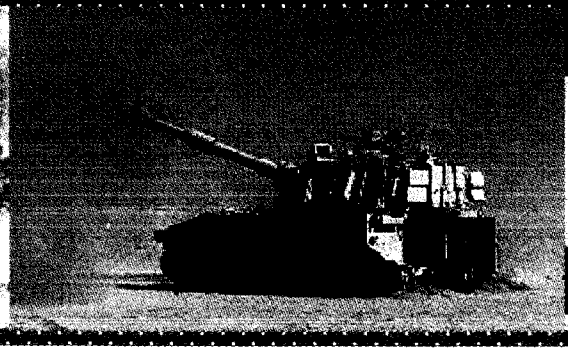
LEAD Transfer

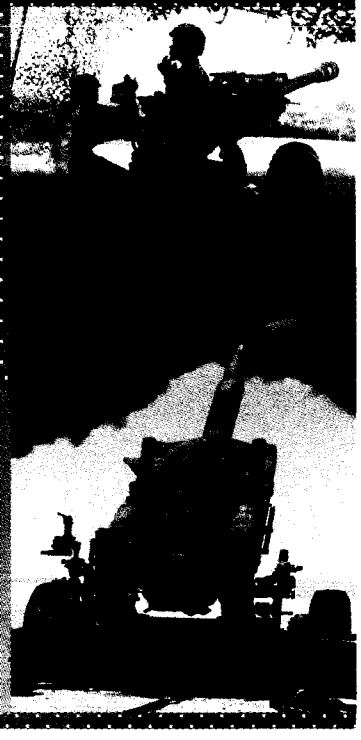
Self-Propelled
&
Towed Artillery

Systems

- M198 Towed Howitzer
- M109 Family of Self Propelled Howitzers
- M992 FAASV
- M109A6 Paladin Conversion Program
- M102 Towed Howitzer
- M119 Towed Howitzer







BRAC 95 Timeline

RRAD

LETTERKENNY ARMY DEPOT
LEAD
CHAMBERSBURG, PENNSYLVANIA

ANNISTON ARMY DEPOT
WEAPONS ◆ COMBAT VEHICLE

Successfully Transitioned with NO IMPACT To READINESS!

	FY96	FY97	FY98	FY99	FY00
M113 FOV	TRANSITION LIMITED PRODUCTION		FULL PRODUCTION		
M9 ACE		TRANSITION & PILOT O/H		FULL PRODUCTION	
TOWED	TRANSITION & PILOT O/H		FULL PRODUCTION		
PALADIN CONVERSION		TRANSITION & PILOT O/H		FULL PRODUCTION	

20% of ANAD's Current Workload (1.065 MDLH's) is a Direct Result of BRAC95

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

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BRAC 05 Industrial Transition Plan

Anniston Army Depot

Anniston Army Depot
BRAC 05 Recommendations

Losses

Gaining Installation	Proposal
N/A	Disestablish storage distribution for tires, packaged petroleum, oils, and lubricants, and compressed gases
N/A	Realign Anniston Army Depot by consolidating the supply, storage, and distribution functions and associated inventories of the Defense Distribution Depot Anniston, AL, with all other supply, storage, and distribution functions and inventories that exist at ANAD to support depot operations, maintenance, and production. Retain the minimum necessary supply, storage, and distribution functions and inventories required to support ANAD and to serve as a wholesale Forward Distribution Point.
Warner Robbins	Relocate all other wholesale storage and distribution functions and associated inventories to the Warner Robins Strategic Distribution Platform

Concerns with Consolidating DLA & ANAD

Supply, Storage, Distribution, & Inventory Functions

- Depot Commander will be responsible for production schedules and budgets, but have no control of internal supply/movement of material
- Experience shows DLA priorities often are not in sync with depot's and don't support depot production requirements
- For aged weapon systems, depot has engineering/manufacturing skills to reclaim, manufacture, or locally procure hard-to-find parts, DLA does not
- Tracking/Moving material-in-process is an integral part of depot maintenance mission. Transferring responsibility to DLA could create confusion and negatively impact maintenance mission

Transfer of Material Management Movement to DLA will Cause Delays/Stoppages of ANAD Production Lines

Anniston Army Depot
BRAC 05 Recommendations

Gains

Losing Installation	Proposal
Red River Army Depot	Close RRAD and relocate the depot maintenance of Armament and Structural Components, Combat Vehicles, Depot Fleet/Field Support, Engines and Transmissions, Fabrication and Manufacturing, Fire Control Systems and Components, and Other to ANAD. Relocate the depot maintenance of Construction Equipment to ANAD and Marine Corps Logistics Base Albany, GA.
Rock Island Arsenal	Realign Rock Island Arsenal by relocating the depot maintenance of Combat Vehicles and Other to ANAD
MCB Barstow, CA	Disestablish the depot maintenance of Aircraft Other Components, Aircraft Rotary, and Strategic Missiles. Consolidate depot maintenance of Engines/Transmissions, Other Components, and Small Arms/Personal Weapons at ANAD
Seal Beach, CA	Relocate the depot maintenance of Other Components to ANAD

BRAC Recommended Transfer

COBRA & DA Recommendation to Facilitize ANAD for a Total of 2.2 MDLH's of Capacity

Transfer Sites

- Red River Army Depot
- Maintenance Center Barstow
- Rock Island Arsenal
- Seal Beach Naval Weapons Station

MCB Barstow

Seal Beach

Assumptions

1. Facilitize for an Additional 2.2 MDLH's
2. ANAD Peacetime Workload Capacity is 3.9 MDLH's
3. The Total ANAD Capacity (Post BRAC) will be 6.1 MDLH's
4. New Construction and/or Renovation will be Required to Accommodate BRAC Recommended Workload

Assumptions (Cont)

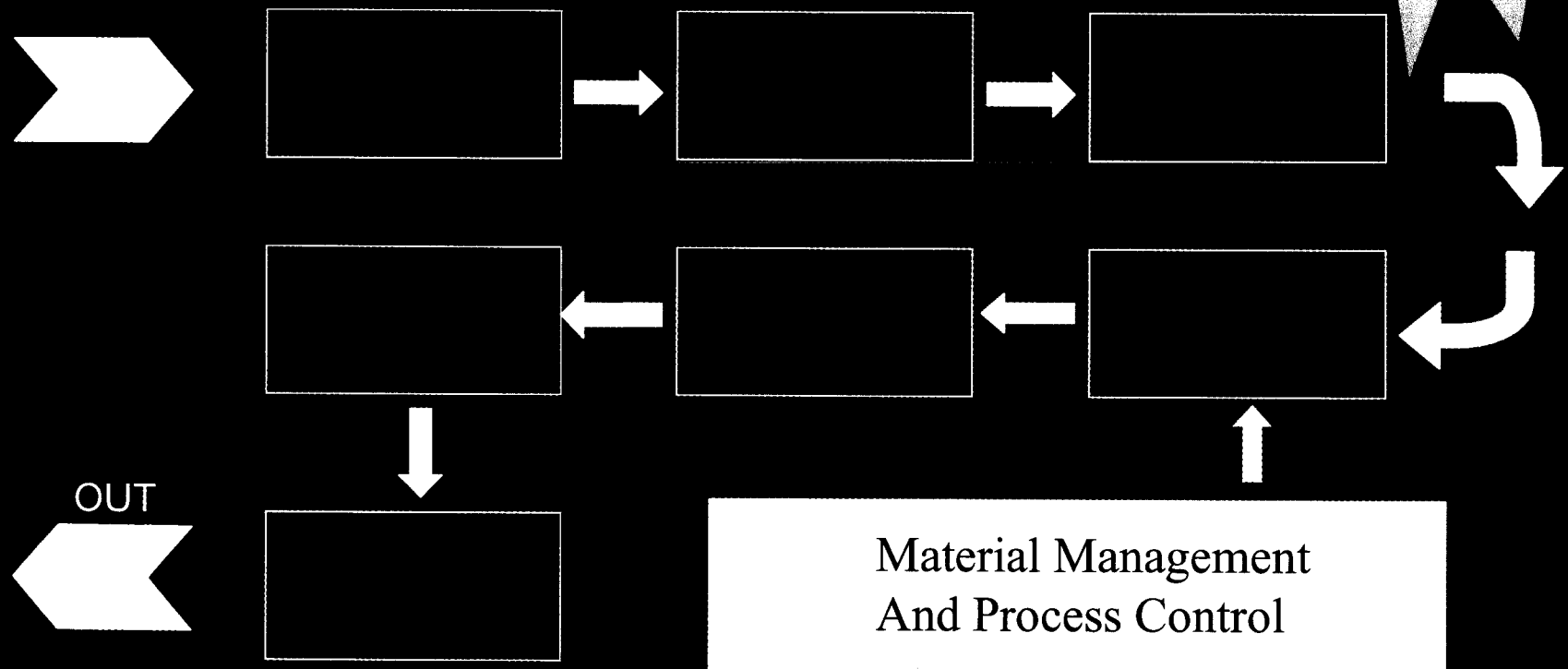
5. All Transition Options will be Based on Cellular Manufacturing Concepts

6. All Existing and Potential Workload will Incorporate Automated Material Management Technology for Work In Process (WIP) and Inventory Visibility to Ensure Production Schedules are Met

7. The Reciprocating Power Train Facility will be Constructed and Operational on Schedule

Cellular Concept

Nothing has to leave the building



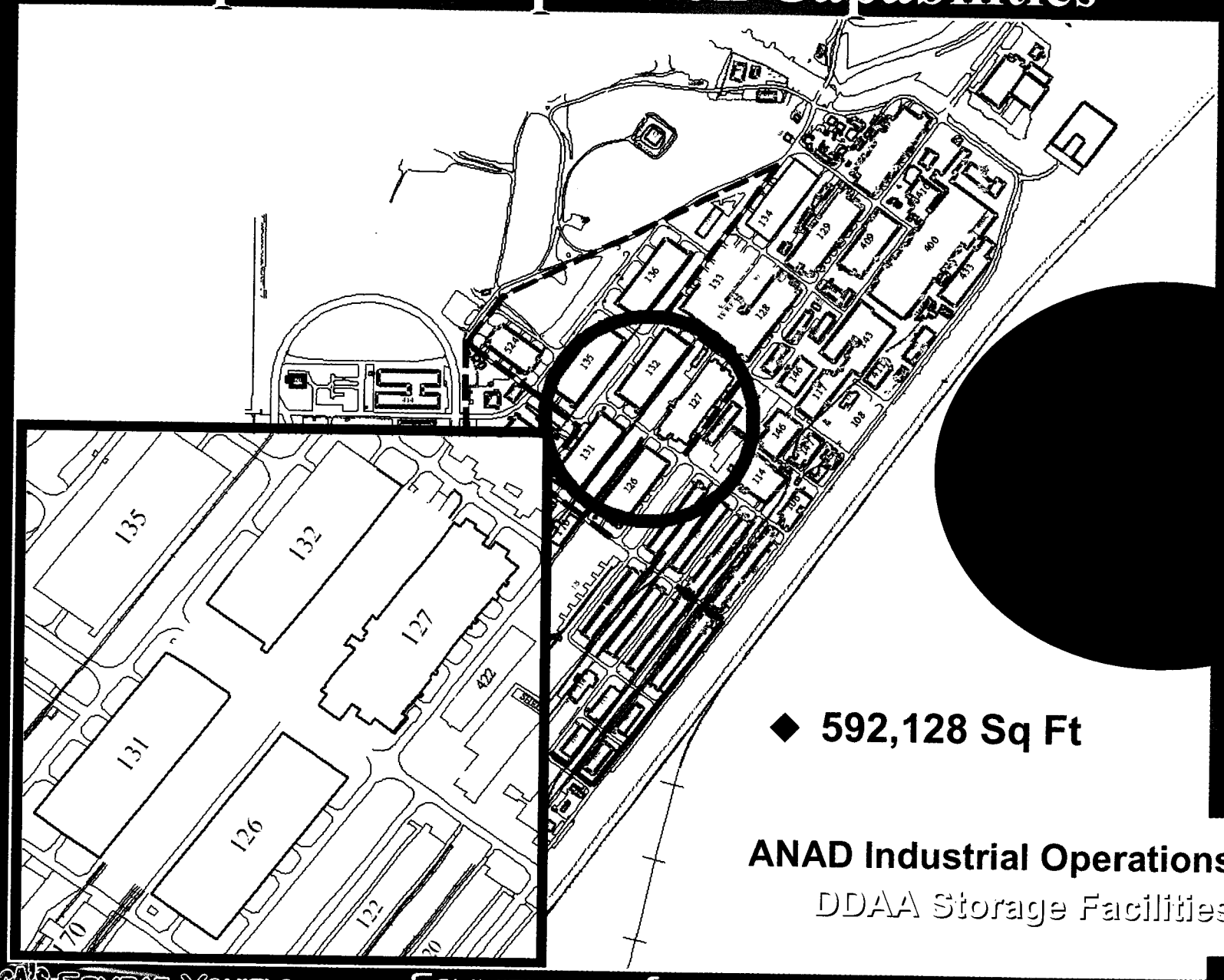
Material Management
And Process Control

Superior
IT Material
Management

Option #1

- Renovate existing DLA Buildings 126, 127, 131,and 132 into Approximately 600,000 sq. ft. Combat Vehicle Facilities
- Pull Forward FY 09 MCA project # 27259 Construction of Industrial Waste Treatment Plant
- Construct New Facilities for the Rubber Plant

Option #1 Expansion Capabilities

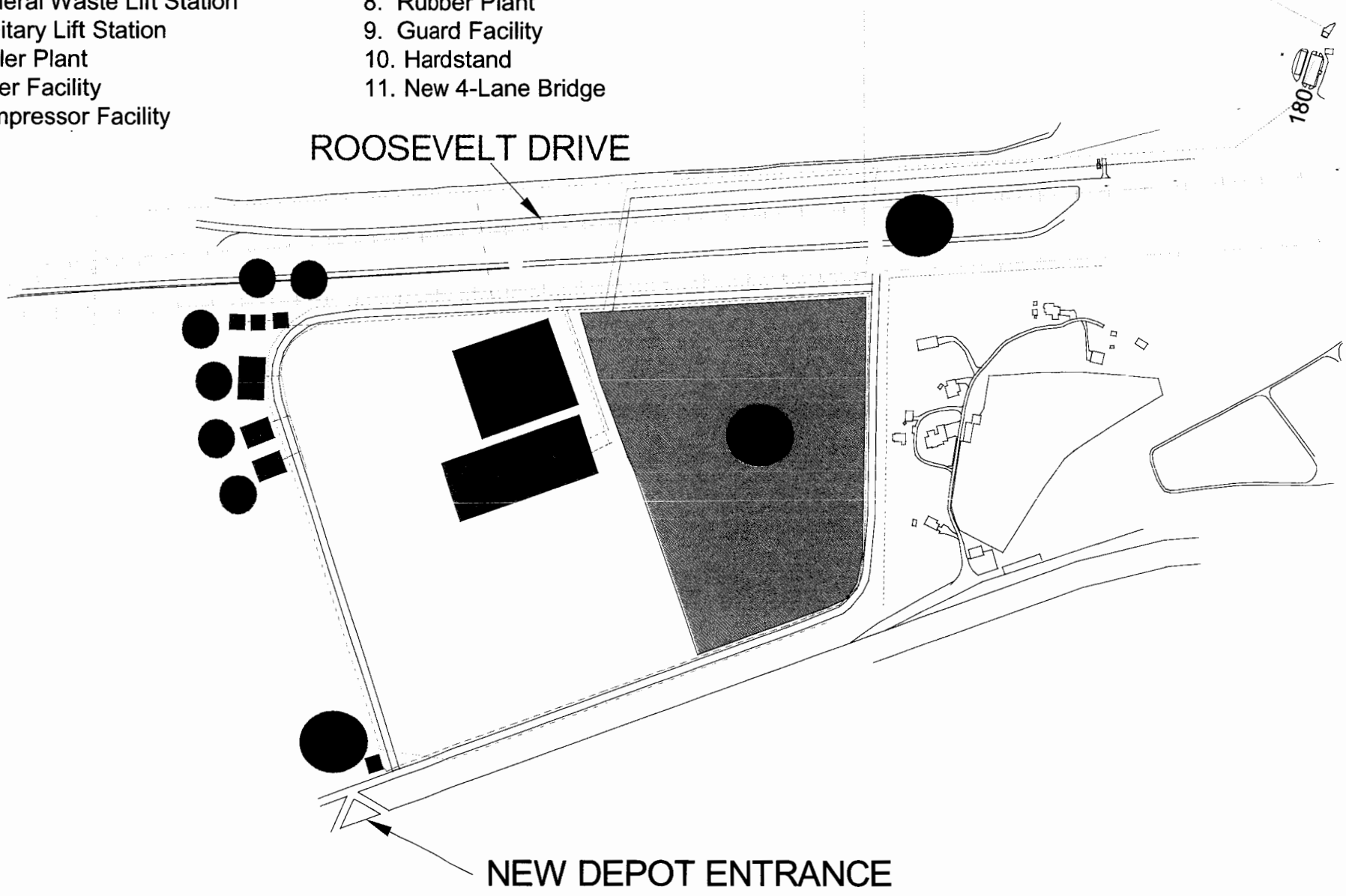


- 592,128 Sq Ft

ANAD Industrial Operations

DDAA Storage Facilities

1. Steam Clean Lift Station
2. General Waste Lift Station
3. Sanitary Lift Station
4. Chiller Plant
5. Boiler Facility
6. Compressor Facility
7. Employee Parking Lot
8. Rubber Plant
9. Guard Facility
10. Hardstand
11. New 4-Lane Bridge



Option #1 Expansion Capabilities

Rubber Plant

- The Rubber Plant Facility is approximately 113,000 sq. ft.
- Cost to Construct is approximately $29 Million
- Equipment:
  - RRAD is Currently Operating on a 3-8-5 Schedule
  - Strategy is to Relocate Select Equipment without Impact to Readiness
  - Perform Pilots/Certification on Transitioned/New Equipment
- ANAD Currently Has A Rubber Manufacturing Engineer with 12 years experience

COBRA Data Identified $167M Required for Facilitization (Site & Associated Support Cost Had Not Been Considered)

Construction Costs Concept Option #1

Facilities	Cost ($M)
Production Facilities:	
◆ 4 DLA Warehouses Renovate/Construct into Combat Vehicle Maintenance Facilities	89.8
◆ Construct New Rubber Plant	29.0
Subtotal	118.8
Support:	
◆ Site Prep & Utilities (Both Locations)	45.5
◆ New Depot Entrance (Rubber Plant)	3.5
◆ Cafeteria (DLA Warehouse)	1.8
◆ Industrial Wastewater Treatment Facility (Both)	12.8
Subtotal	63.6
TOTAL	182.4
* Artifacts Storage	22.0

* Artifacts Storage was a Command Directive

COBRA Environmental Considerations

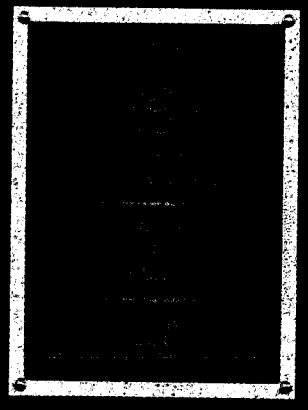
- Endangered Species (Tennessee Yellow Eyed Grass)
  - **Two Remote/Small Locations**
  - **No Impact on Planned Construction**

- Out Year Project to Upgrade the Industrial Wastewater Treatment Plant Required
  - **Concur**

- Impact to Air Quality
  - **A Prevention of Significant Deterioration (PDS) Permit will be required to operate Rubber Plant**

- Additional mitigation measures/pollution prevention with increased ANAD activities will be required to protect the Aquifer
  - **Aquifer Protection Measures Will Not Change, Regardless of BRAC Decision**

Environmental Leadership



2000 Alabama Department of Environmental Management Director's Award:

- Pollution Prevention Award Winner

2002 Secretary of the Army Environmental Awards Program:

- Runner-up Pollution Prevention Team Award

2003 Secretary of the Army Environmental Awards Program:

- Installation Restoration Award

2003 Secretary of the Army Environmental Awards Program:

Pollution Prevention - Industrial Installation Award

2003 Secretary of Defense Environmental Awards Program:

- Installation Restoration Award

2003 Secretary of Defense Environmental Awards Program:

- Pollution Prevention - Industrial Installation Award

CERTIFICATE OF RECOGNITION

ANNISTON ARMY DEPOT

Environmental Awards

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE – SUPPORTING AMERICA'S WARFIGHTERS

COBRA Local Community Considerations

- Potential Shortfall in Housing

- Utilities
  - Water – Additional 120,000 People
  - Sewage – Additional 50,000 People
  - Electrical – Additional 5,000 Homes

- Schools
  - Additional 7,506 Students (9 Districts)

- Homes/Realty
  - 1,060 Homes for Sale

Conclusion: ANAD

TOWED & SELF-PROPELLED ARTILLERY

SMALL ARMS

COMBAT VEHICLES

TRANSFORMING

- ANAD a Multi-Mission Installation
- America's Combat Vehicle Support Center
- Excellent Joint Service Support
- Supporting a Transforming Force
- Innovative Business Practices

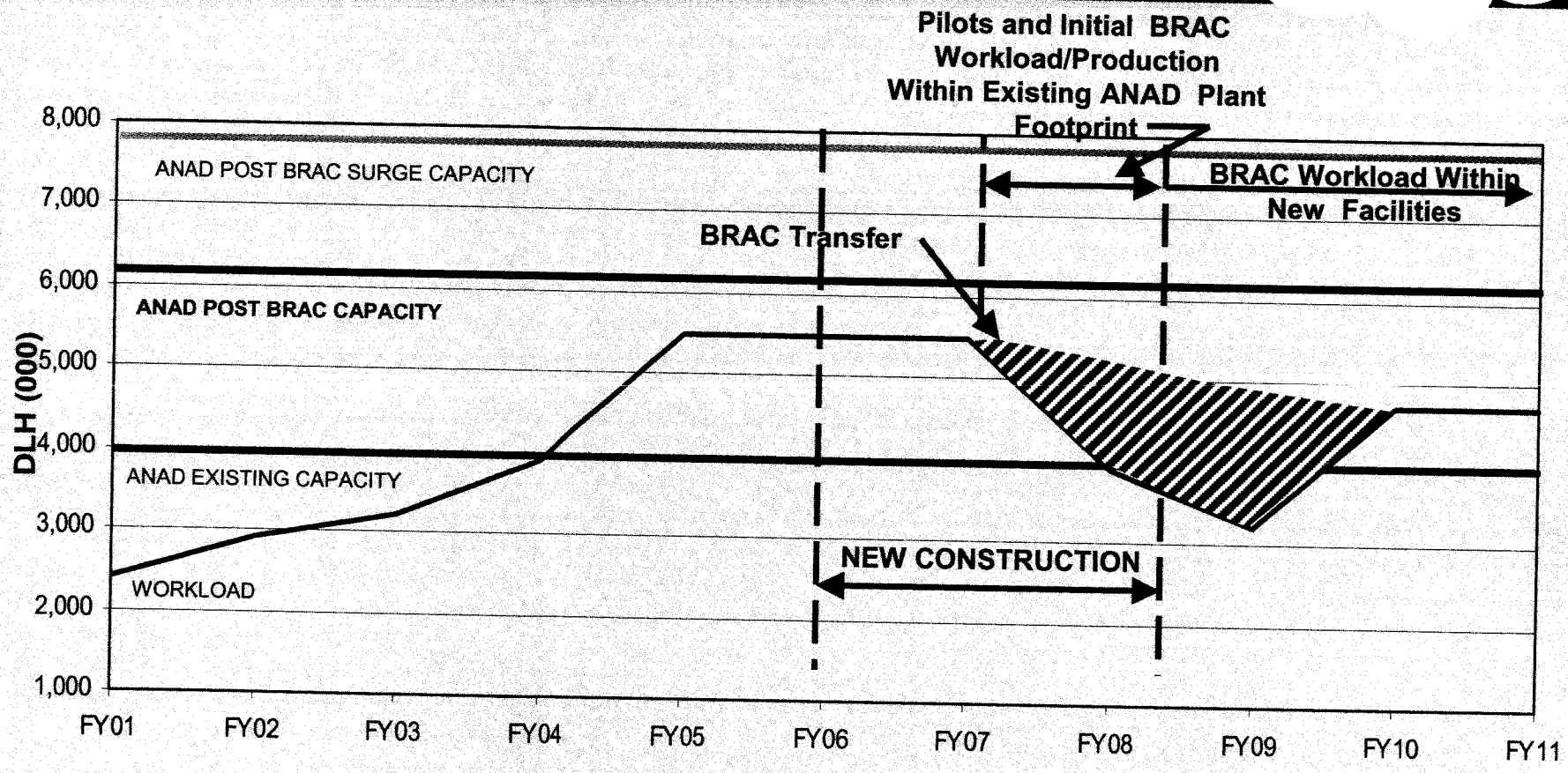
Has the Plans, Experience, and Workforce to Successfully Implement *the*...BRAC05 Recommendations

Questions

BACKUP CHARTS

BRAC Transition Plan

Wartime Surge Workload Begins to Level Off/Decline After Next Supplemental (FY 06)



High Performance & Innovative Business Practices

Mobilization & Forward Support

Preparing to Deploy

Depot Forward (Kuwait / Iraq)

- Component Overhaul
- HMMWV Service Center
- HMMWV Survivability Kits
- 88 Civilian Soldiers to Date

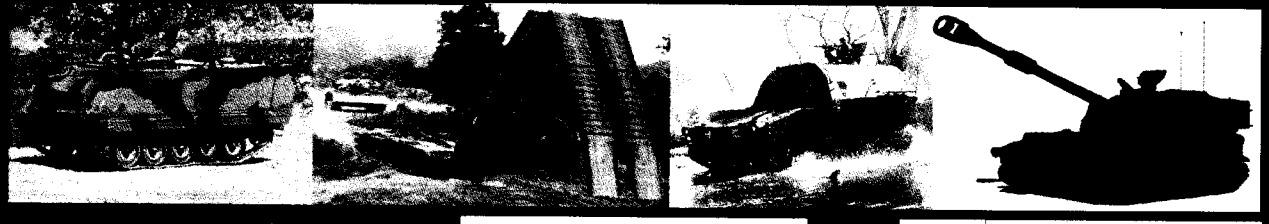
Depot Forward (Ft. Knox)

US Army Armor Center, Fort Knox, KY

RESET

M113	208
M1	89
M109	59
M88	152
M9ACE	50
FAASV	18
AVLB	38
Various Small Arms	90,768

Combat Vehicles



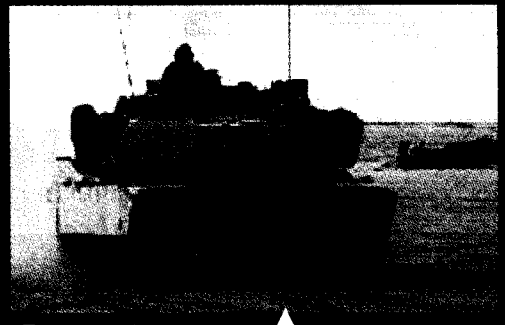
Innovative Business Practices

Supporting a

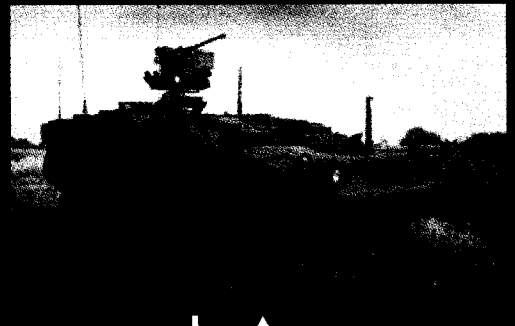
Transforming Force…

CURRENT — FUTURE

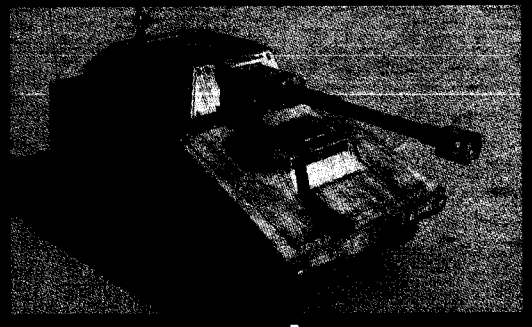
Current System M1A2



Stryker Combat System



Future Combat System (FCS)



ANAD Technology and Process Development

SUPPORTING A TRANSFORMING FORCE

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE – SUPPORTING AMERICA'S WARFIGHTERS

Capabilities

✱ Exclusive to Anniston

DEPARTMENT OF DEFENSE

- [illegible] with
- [illegible] 13 Bridge
- [illegible]
- ✱ Classified Armor Repair Facility
- ✱ 50 Ft Wide 1.1 Mile Banked High-Speed Combat Vehicle Test Track w/Laser Test Range
- ✱ Engine Recuperator Repair &Test Facility
- ✱ DoD Small Arms Storage & Maintenance
- ✱ DoD Recognized Site For Ground Combat Turbine Manufacturing, Overhaul, & Test

ARMY DEPOT MAINTENANCE

- ✱ Multiple -System Capable Workforce
- ✱ 9 ½" Reinforced Concrete Vehicle Shop Buildings & Roadways
- ✱ 2 Computer Numerically Controlled Combat Vehicle Machining Centers
- ✱ 75-Ton Gantry Crane
- ✱ Function Ammo Range - Up to 8" Firing

- ◆ Hot-Start Production Lines
- ◆ Flexible Computer Integrated Manufacturing Facility
- ◆ Materials and Chemical Engineering Labs
- ◆ Rapid Vehicle Prototyping
- ◆ Computerized Dynamometer Test Facility

Anniston Army Depot
Installation Familiarization Reference Book
For: Elizabeth Bieri and George Delgado
June 2005

TABLE *OF* CONTENTS

America's Combat Vehicle Support

Joint Work

Innovative Business Practices
(Balanced and Integrated Partnering)

Supporting A Transforming Force

Expansion

Interdependent Multi-Missions

Environmental

Economic Impact

CD – Installation Familiarization Briefing
CD – ANAD Installation Familiarization Reference Book
CD – Depot Video
CD – Installation Maps
Anniston Army Depot Installation Map - Inside Front Pocket

ANNISTON ARMY DEPOT
WEAPONS ◆ COMBAT VEHICLES ◆ AMMUNITION

INSTALLATION Familiarization Briefing

Committed to Excellence - Supporting Warfighters

ank-automotive & Armaments Command

"Deliberative Document –
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Outline

- Installation Description
- America's Combat Vehicle Support Center
- Joint Service Support
- Supporting A Transforming Force
- Industrial Mission Expansion Capabilities
- Facility & Environmental Considerations
- Interdependent Multi-Missions
- Community Relations
- Innovative Business Practices
- Conclusion

Installation Description

- 1,771 Bldgs/Structures
- 244 Miles of Roadway
- 93 Miles of Fencing
- 46 Miles of Railroad
- 15,243 Acres
- $1.6 Billion Plant Replacement Value
- $1,030M FY05 Depot Budget
- $680M Average Annual Tenant & Contractor Budget
- 6,082 Total Employees
- 4,087 Depot Employees

AMC

TACOM

GSIE

U.S. Army TACOM

SYSTEMS
INDUSTRIAL
ENTERPRISE

ANAD

ANNISTON ARMY DEPOT
WEAPONS ◆ COMBAT VEHICLES ◆ AMMUNITION

History

1940 War Department Begins Planning Construction of an Army Ordnance Depot in Northeast Alabama

1941 Four Employees. Named Anniston Ordnance Depot by War Department

1942 Depot Workforce is 4,339

1962 Renamed Anniston Army Depot, an Installation Under the Jurisdiction of the Army Materiel Command (AMC)

1993 Partnering with Industry Efforts are Initiated with the Depot Becoming the Forerunner in This New Arena

1999 Anniston Army Depot Comes Under the Jurisdiction of the U.S. Army Tank-Automotive & Armaments Command (TACOM) in Warren, Michigan (GSIE 2002)

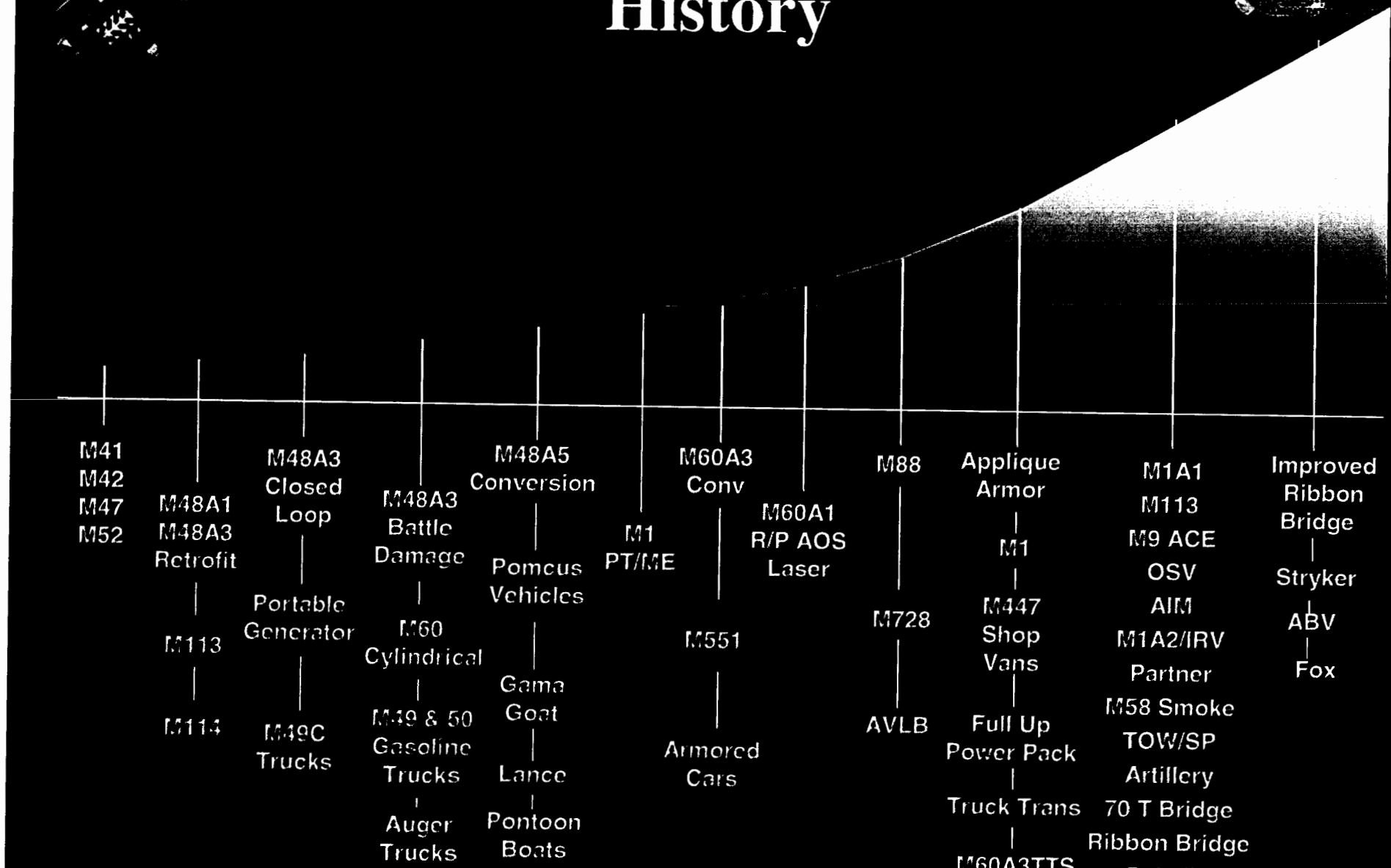
1940's | 1950's | 1960's | 1970's | 1980's | 1990's | 2000's

1950's Depot Assigned a Maintenance Mission for the Overhaul & Repair of Combat Vehicles

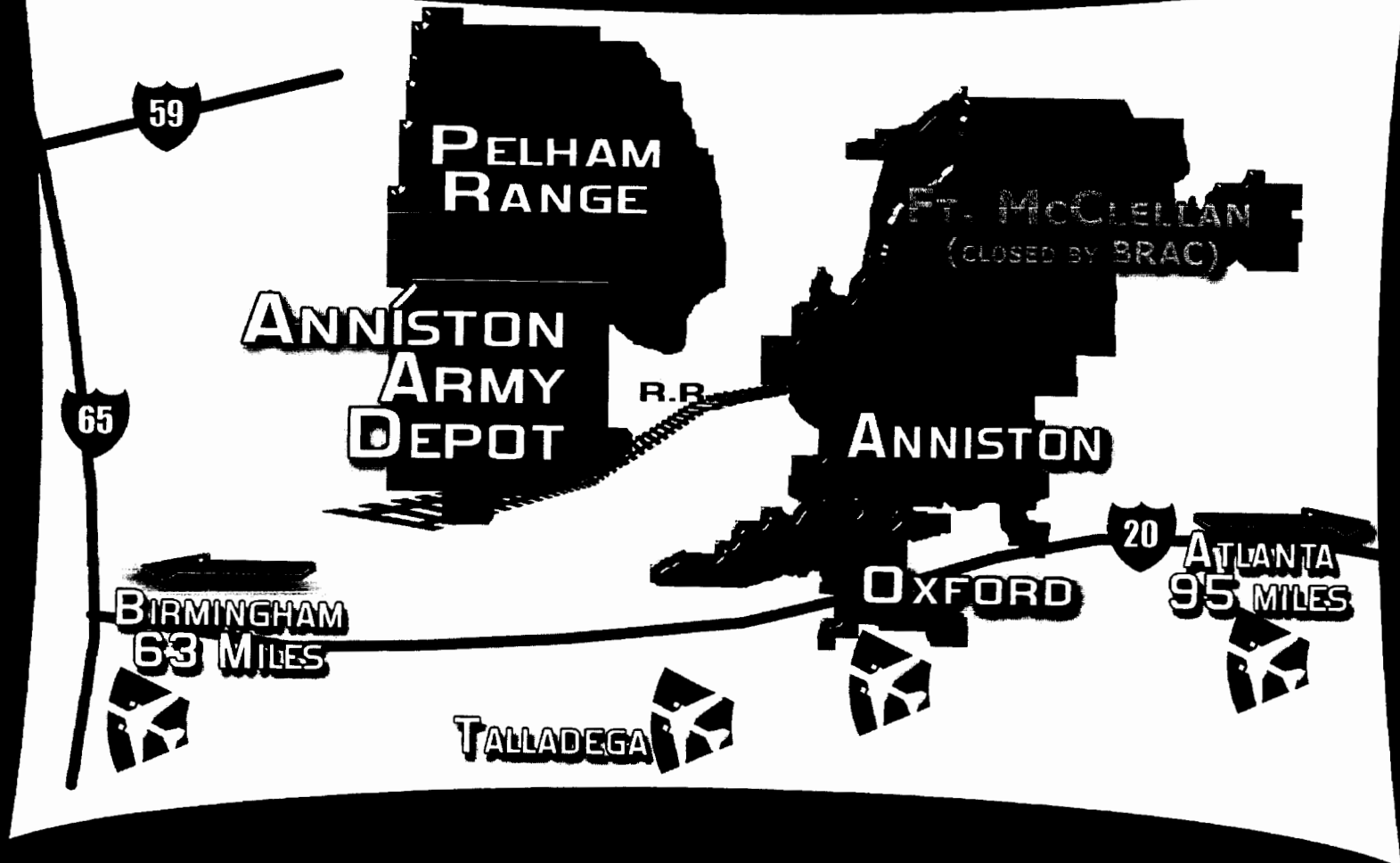
1980's Missile Maintenance Becomes a New Mission, As Did the M1 Abrams Tank

2002 Partnership With General Dynamics/ General Motors on New Production of STRYKER Vehicle

Vehicle Type History



Strategic Location & Deployment Network



INSTALLATION DESCRIPTION

Installation Mission Organization & Tenants

INSTALLATION DESCRIPTION

Commander
Deputy to the Commander

- Depot Sergeant Major
- General Manager for Production (GMPO)
  - Dir of Production (DP)
  - Dir of Mission Plans & Ops (DMPO)
  - Dir of Engineering & Quality (DEQ)
- Dir of Resource Mgt (DRM)
- Dir of Contracting (DOC)
- Dir of Law Enf & Security (DP)
- Depot Operations Office
- Int Rev & Audit Compl Ofc (IRAC)
- Safety Office
- Legal Office
- Ofc of Equal Opportunity (EEO)
- Historical Clearinghouse
- CPAC
- Chief of Staff
  - Dir of Public Works (DPW)
  - Dir of Risk Management (DRK)
  - Dir of Information Mgt (DOIM)
  - Dir of Com & Fam Act (DCFA)
  - Garrison Mgt Office
  - Public Affairs Office (PAO)
  - Protocol

MAJOR TENANTS:

- Anniston Defense Munitions Center (ADMC)
- Anniston Chemical Activity (ANCA)
  - Anniston Chemical Agent Disposal Facility (ANCDF)
- Defense Distribution Depot Anniston, Alabama (DDAA)
- Dear Clinic - MEDDAC
- Defense Reutilization & Marketing Office (DRMO)
- U. S. Army Center of Military History - Clearing House
- USA Test, Measurement & Diagnostic Equipment (TMDE) Support Center
- 722nd Ordnance Company (EOD)
- Ten Other Tenants

Mission & Future Focus

ANAD Mission

To Provide Industrial & Technological Support for Current & Future Ground Combat Systems

To Equip & Sustain Joint Warfighters & Allies

To Employ a Highly Skilled, Ready, & Responsive Workforce

To Utilize Innovative, State-of-the-Art Processes & Infrastructure

To Maximize Use of Prototypes, Technology Insertion & Partnering Initiatives

ANAD Future Focus

We Are...

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Anniston

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

...The Premier DoD Center for Industrial & Technical Excellence for Current & Future Ground Combat Systems

Uniquely Vital
Technologically Superior
Unconditionally Responsive Worldwide

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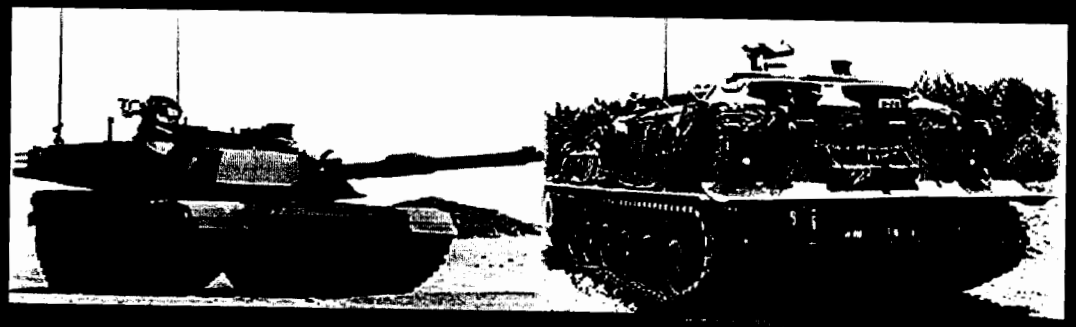
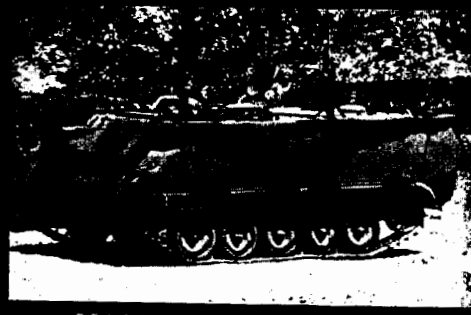
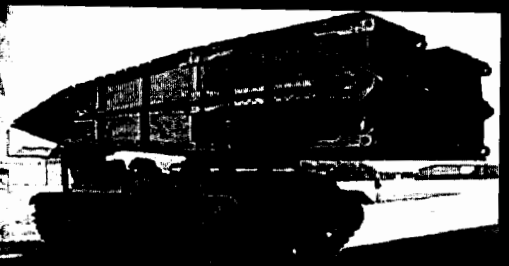
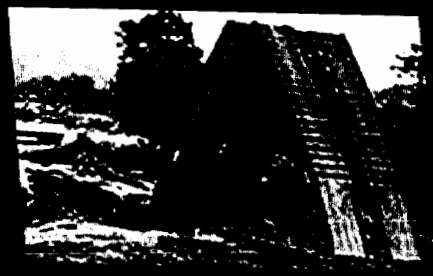
Combat Vehicles





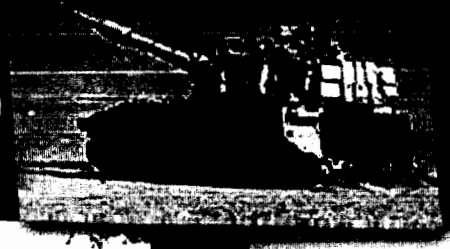


Towed & Self Propelled Artillery /Bridges



70 Ton Bridge

Medium Girder Bridge



M109A6 Self Propelled Howitzer

M119 Towed Howitzer

M198 Towed Howitzer

Ribbon Bridge

Field Artillery Ammunition Support Vehicle

America's Combat Vehicle Support Center

Department of Defense
Small Arms Facility

M9 Pistol

M249 Squad Automatic Weapon

M16 Rifle

M2 Machine Gun

M230 Chain Gun

Mortar

MK19 Grenade Launcher

America's Combat Vehicle Support Center

America's Combat Vehicle Support Center

Committed to Excellence – Supporting America's Warfighters

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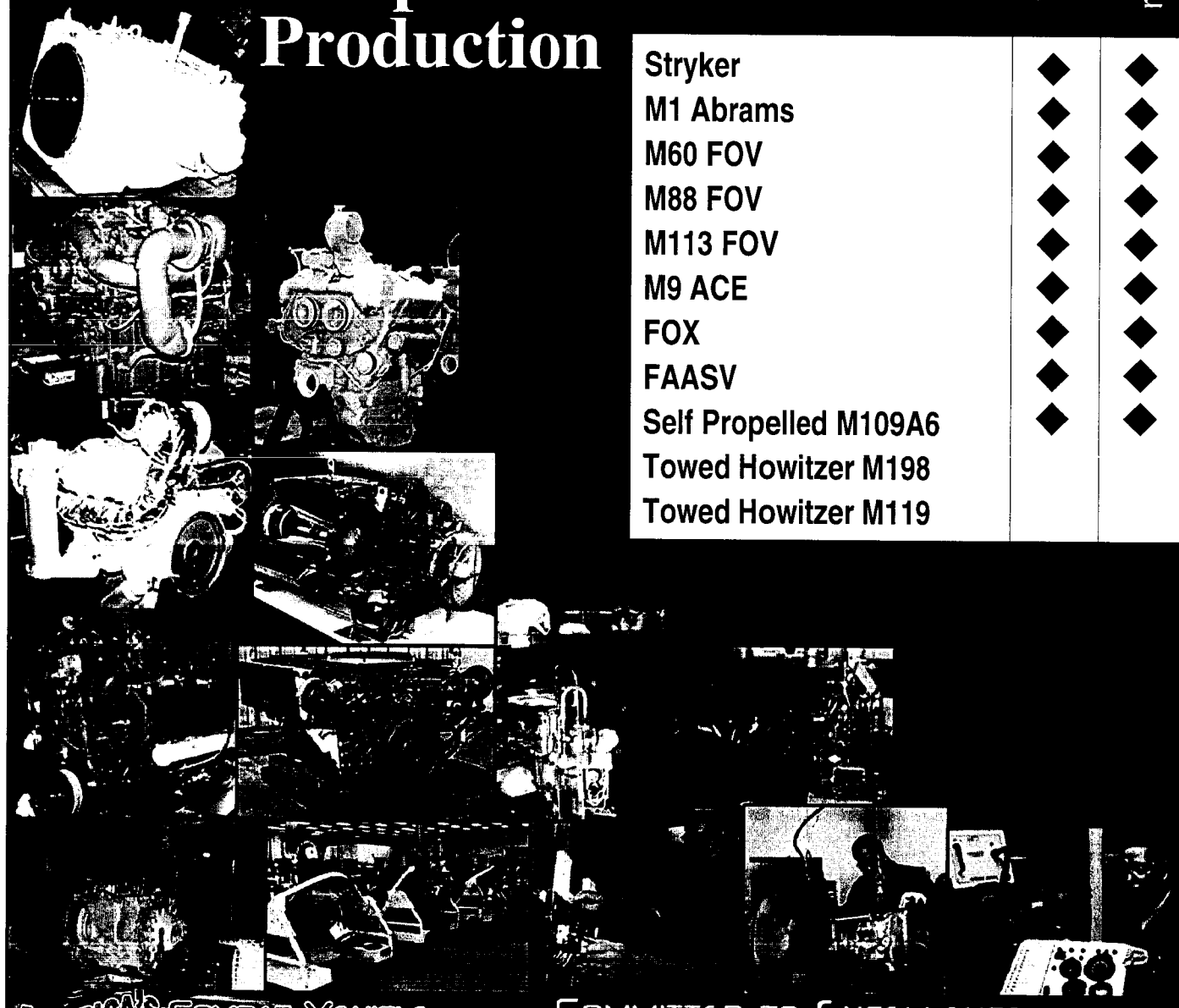
Combat Vehicle Component Production

Vehicles/Artillery Sub-Assemblies	Engines	Trans-missions	Final Drives	Hydraulics	Fire Control	Fire Suppression	Recoil/Gun Tube
Stryker	◆	◆	◆	◆	◆	◆	◆
M1 Abrams	◆	◆	◆	◆	◆	◆	◆
M60 FOV	◆	◆	◆	◆	◆	◆	◆
M88 FOV	◆	◆	◆	◆		◆	
M113 FOV	◆	◆	◆	◆		◆	
M9 ACE	◆	◆	◆	◆		◆	
FOX	◆	◆	◆	◆		◆	
FAASV	◆	◆	◆	◆		◆	
Self Propelled M109A6	◆	◆	◆	◆	◆	◆	◆
Towed Howitzer M198					◆		◆
Towed Howitzer M119					◆		◆

Overhauled at ANAD & Available to Warfighters World-Wide



AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE - SUPPORTING AMERICA'S WARFIGHTERS

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Capabilities

✱ Exclusive to Anniston

DEPARTMENT OF DEFENSE

- [illegible] with
- [illegible] including 13 Bridge Cranes from 10 to 60 Tons
- ✱ Classified Armor Repair Facility
- ✱ 50 Ft Wide 1.1 Mile Banked High-Speed Combat Vehicle Test Track w/Laser Test Range
- ✱ Engine Recuperator Repair &Test Facility
- ✱ DoD Small Arms Storage & Maintenance
- ✱ DoD Recognized Site For Ground Combat Turbine Overhaul & Test

ARMY DEPOT MAINTENANCE

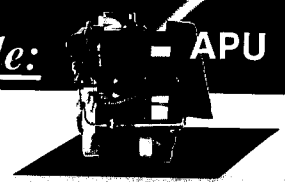
- ✱ Multiple -System Capable Workforce
- ✱ 9 ½" Reinforced Concrete Vehicle Shop Buildings & Roadways
- ✱ 2 Computer Numerically Controlled Combat Vehicle Machining Centers
- ✱ 75-Ton Gantry Crane
- ✱ Function Ammo Range - Up to 8" Firing

Hot-Start Production Lines
Flexible Computer Integrated Manufacturing Facility
Materials and Chemical Engineering Labs
Rapid Vehicle Prototyping
Computerized Dynamometer Test Facility

Full Spectrum Support

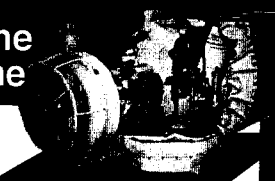
Example:

Engines



APU

Generator (11 HP) | 6-V (275 HP) | 8-V (400 HP) | 1790(12-V) (750 HP) | Turbine (1500 HP)



Turbine Engine

Weapons Systems

Armored Personnel Carrier | Towed Howitzer | Recovery Vehicle | M60 Bridge Launcher | 70 Ton Bridge Launcher | Self Propelled Howitzer | Stryker | M1

Fighter Aircraft/ Aerospace Technology in a Ground Combat System

Turbine
Electronics
Pneudraulics
Laser
Thermal

Anniston *has the*

Infrastructure, Technology and

to Perform

- Heaviest to Lightest
- Largest to Smallest
- High to Low Technology

Within the shops of Anniston,

a Cadre of Highly Skilled Technicians Are Trained & Exercised Daily Across the Full Spectrum of Weapon Systems & Technologies...

...Ready for Immediate Deployment & Capable of supporting these DoD Combat Vehicles

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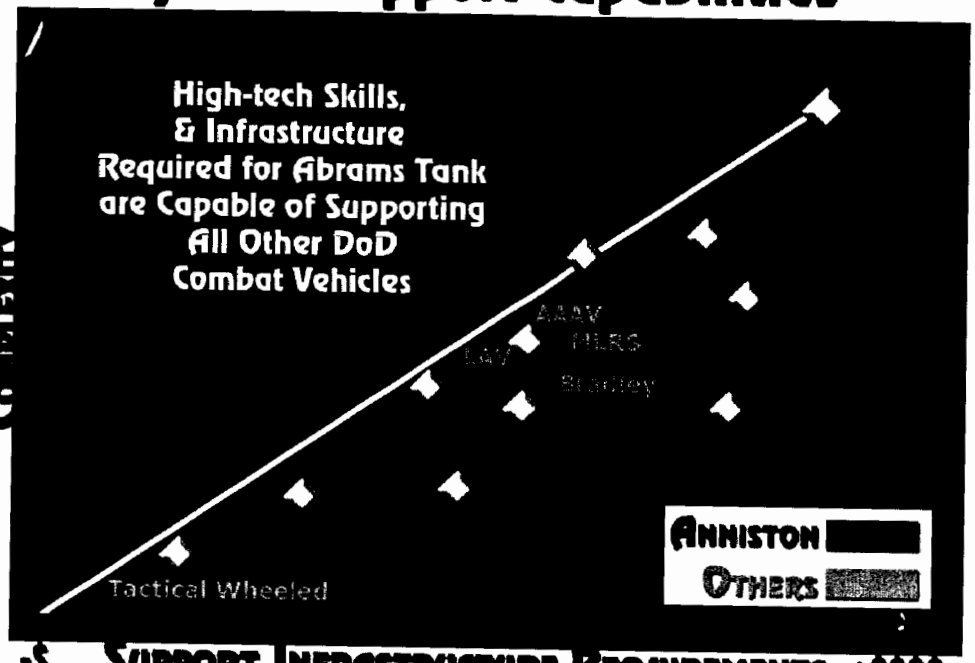
System Support Capabilities

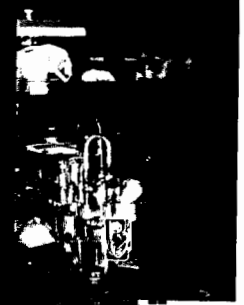


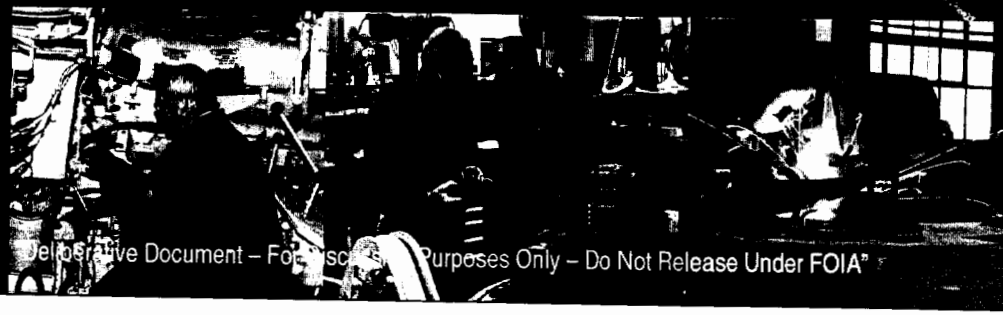
-$ SUPPORT INFRASTRUCTURE REQUIREMENTS +$$$$

AAAV - Advanced Amphibious Assault Vehicle
MLRS - Multiple Launch Rocket System
FAASV - Field Artillery Ammunition Support Vehicle
AVLB - Armored Vehicle Launched Bridge
LAV - Light Armored Vehicle

Workforce Demographics

36 - Small Arms Repairers
159- Certified Ballistic Welders
52 - Pneudraulic Workers
778- Heavy Mobile Equipment Mechanics
243- Machine Tool Operators
23 - Tool and Die Makers
68 - Artillery Repairers
33 - Electro-Optics Repairers
46 - Electronics Mechanics
55 - Electronic Integrated Systems Mechanics
23 - Electroplating Workers
11- Metal Forming Machine Operators
66 - Production Engineering Personnel





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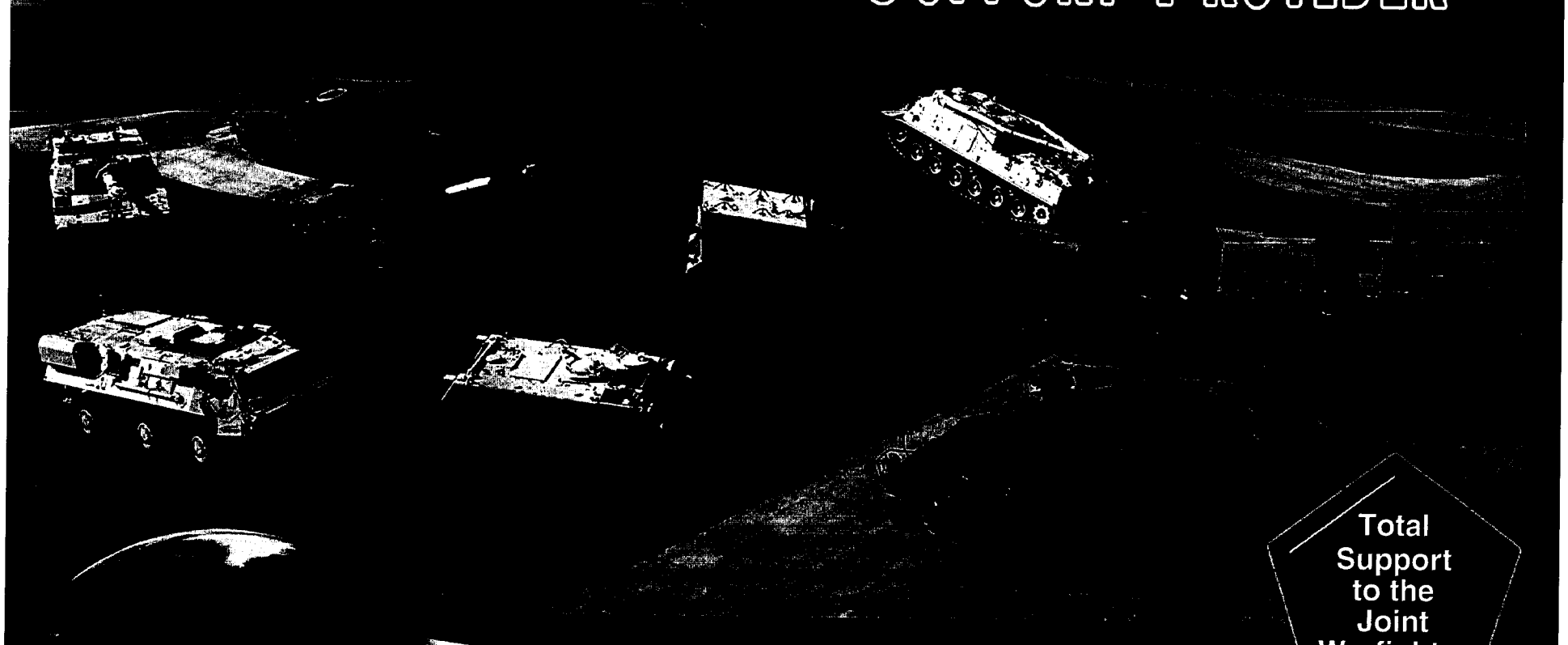
THE PREMIER JOINT COMBAT SYSTEM SUPPORT PROVIDER

AMERICA'S COMBAT VEHICLE SUPPORT CENTER



Total Support to the Joint Warfighter

- UNIQUELY VITAL
- TECHNOLOGICALLY SUPERIOR
- UNCONDITIONALLY RESPONSIVE

WORLDWIDE

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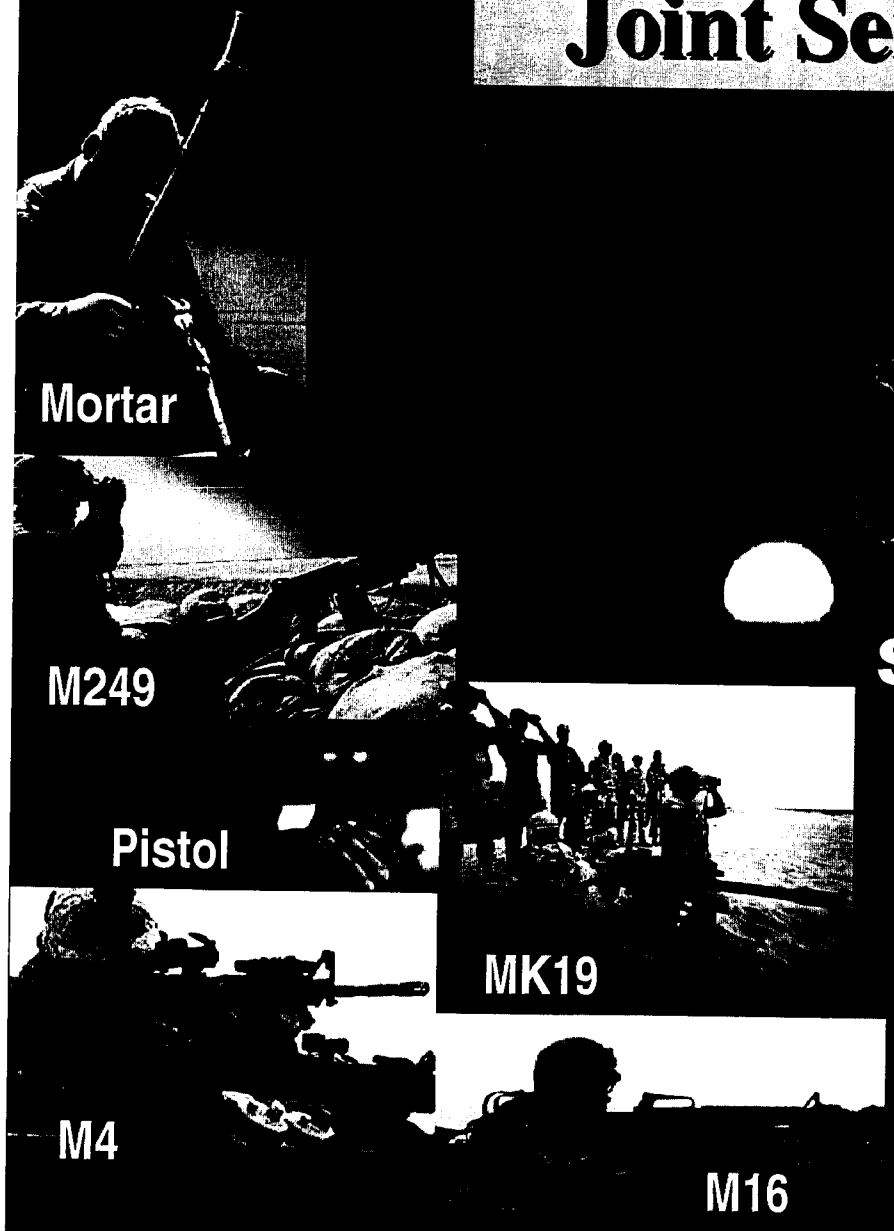
Joint Service Support

JOINT



Department of Defense Small Arms Overhaul/ Conversion Facility

- Army
- Air Force
- Navy
- Marines
- National Guard
- Army Reserves
- Foreign Military Sales

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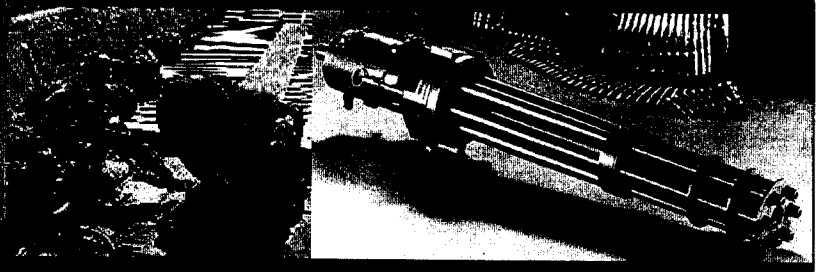
Joint Service Support

United States Air Force (USAF)

United States Navy (USN)



Army Reserve (AR)

Total Support To The Joint Warfighter

JOINT SERVICE SUPPORT

National Guard (NG)

United States Marine Corps (USMC)

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE – SUPPORTING AMERICA'S WARFIGHTERS

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Joint Service Support

United States Marine Corps

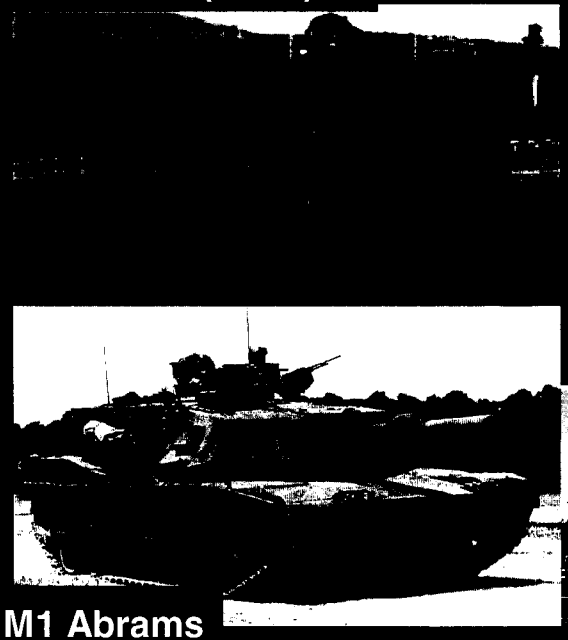
JOINT

JOINT Workload ($M)

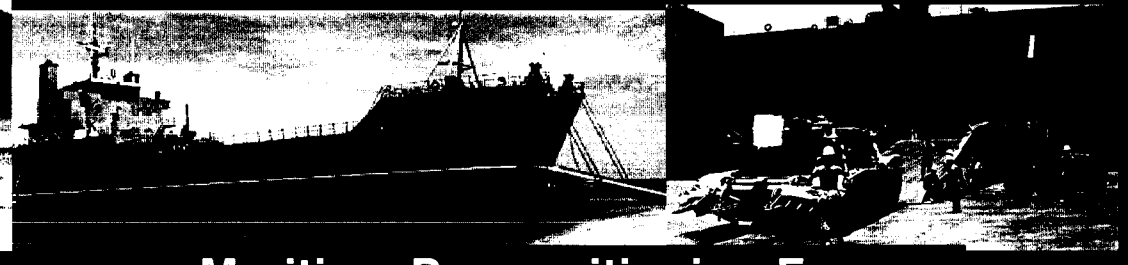
100
75
50
25
0

FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07

Assault Breecher Vehicle (ABV)



M1 Abrams



Maritime Pre-positioning Force

JOINT SERVICE SUPPORT

Joint Service Support

Prototype Development Production

Joint Service Support

	ARMY	AF	NAVY	MARINES	NG	FMS	DOHS	FEMA	AR
Combat Vehicles/Artillery									
Stryker	◆								
M1/M60 FOV	◆			◆	◆	◆			
M88 FOV	◆				◆	◆			
M113 FOV	◆				◆	◆			
FOX	◆								
FAASV	◆				◆				
Self Propelled Howitzer	◆				◆	◆			
Towed Howitzer	◆				◆	◆			
Bridges (AVLB, MGB, etc...)	◆				◆	◆			
AVLB Flying Squad	◆				◆				
Other Vehicles/Components	◆			◆	◆	◆			◆
Small Arms									
Pistols	◆	◆			◆	◆			
Rifles	◆	◆			◆	◆			
Machine Guns	◆	◆	◆	◆	◆	◆			◆
Mortars	◆		◆	◆	◆	◆			◆
Rail & Generator						◆			
Locomotives/Rail Equip.	◆	◆	◆						
Generators	◆	◆	◆	◆	◆	◆		◆	◆
Ammunition	◆	◆	◆	◆	◆	◆			◆
Other	◆	◆	◆	◆	◆	◆	◆	◆	◆

JOINT

✓ Common Army, U.S. Marine Corps Systems... Prime Opportunities for Future Consolidation

JOINT SERVICE SUPPORT

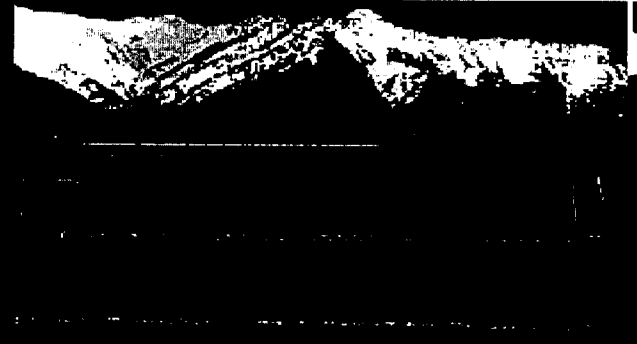
Joint Service Support

Defense Generator & Rail Center (DGRC)

Generator

- Only facility of its kind in Department of Defense
  - Only organization that performs all levels of rail equipment maintenance
  - Only facility that provides overhaul & modification of non-tactical generators

Physically Located at Hill Air Force Base



Locomotive

- U.S. Marine Corps
- Air Force
- Navy
- Army
- Foreign Military Sales
- Homeland Security/ Federal Emergency Management Agency

JOINT SERVICE SUPPORT

America's Combat Vehicle Support Center

Our

Technologies...
...Capabilities...
...Processes...
...Skills &
...Infrastructure...

...Building our Master Plan for the Future

To Support...

SUPPORTING A TRANSFORMING FORCE

Supporting a

Transforming Force...

CURRENT — FUTURE

Current System M1A2

Stryker Combat System

Future Combat System (FCS)

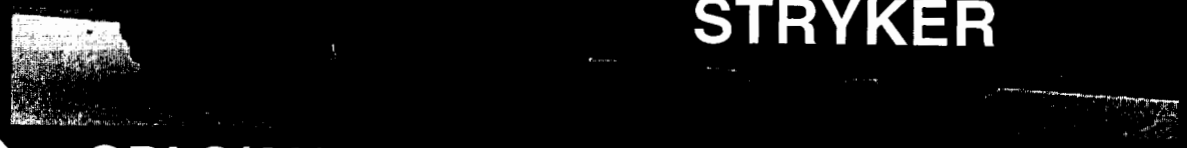
SUPPORTING A TRANSFORMING FORCE

Supporting a

Transforming Force…

5th Brigade in FY 05
6th Brigade in FY 06

Currently Providing Protection to the Warfighters in Iraq



STRYKER

GDLS/ANAD Co-Production
10 Variants
515 Produced & Tested to Date

*GDLS =
General Dynamics
Land System Division

Supporting a
Transforming Force...

Future Combat System (FCS)

ANAD is Developing Expected FCS Technologies

- Titanium Welding
- Composites Repair
- Hybrid-Electric
- Wireless Technology
- Condition Based Maintenance

Industrial Expansion

Mission Expansion
Will Be Within a Superior Infrastructure…

INDUSTRIAL MISSION EXPANSION CAPABILITIES

- 53 Miles Fiber Optic Cable
- 11.5 Miles Road Resurfaced
- 213 Pieces of Industrial Equipment >$10k, at a Value of over $28M
- 13 Buildings Resided
- 52 Buildings Roofing Replaced
- 50 Buildings Improved Lighting
- 354,475 Sq. Ft. New Buildings Constructed

Master Plan
MCA Projects

5	AN50499	Powertrain/Flexible Maintenance Center	24.00
6	AN60303	High School Co-Op Facility Expansion	0.80
	AN60725	Central Chiller Plant (ECIP)	9.60
	AN60726	Energy Management and Control System (ECIP)	2.35
	AN60727	Emergency & Auxiliary Propane-Air System (ECIP)	0.58
7	AN27259	27259/Industrial Waste Treatment Plant Renovation	12.40
	AN27261	27261/Domestic Waste Treatment Plant Renovation	8.20
	AN55694	55694/Child Development Center	3.50
8	AN56564	General Instruction Building	1.10
	AN57620	57620/Powertrain Transmission Repair Facility	25.60

Approved FYDP TOTAL 25.1 Mil

Planne TOTA .03

ECIP- Energy Conservation Investment Project

(FYDP – Future Years Defense Plan)

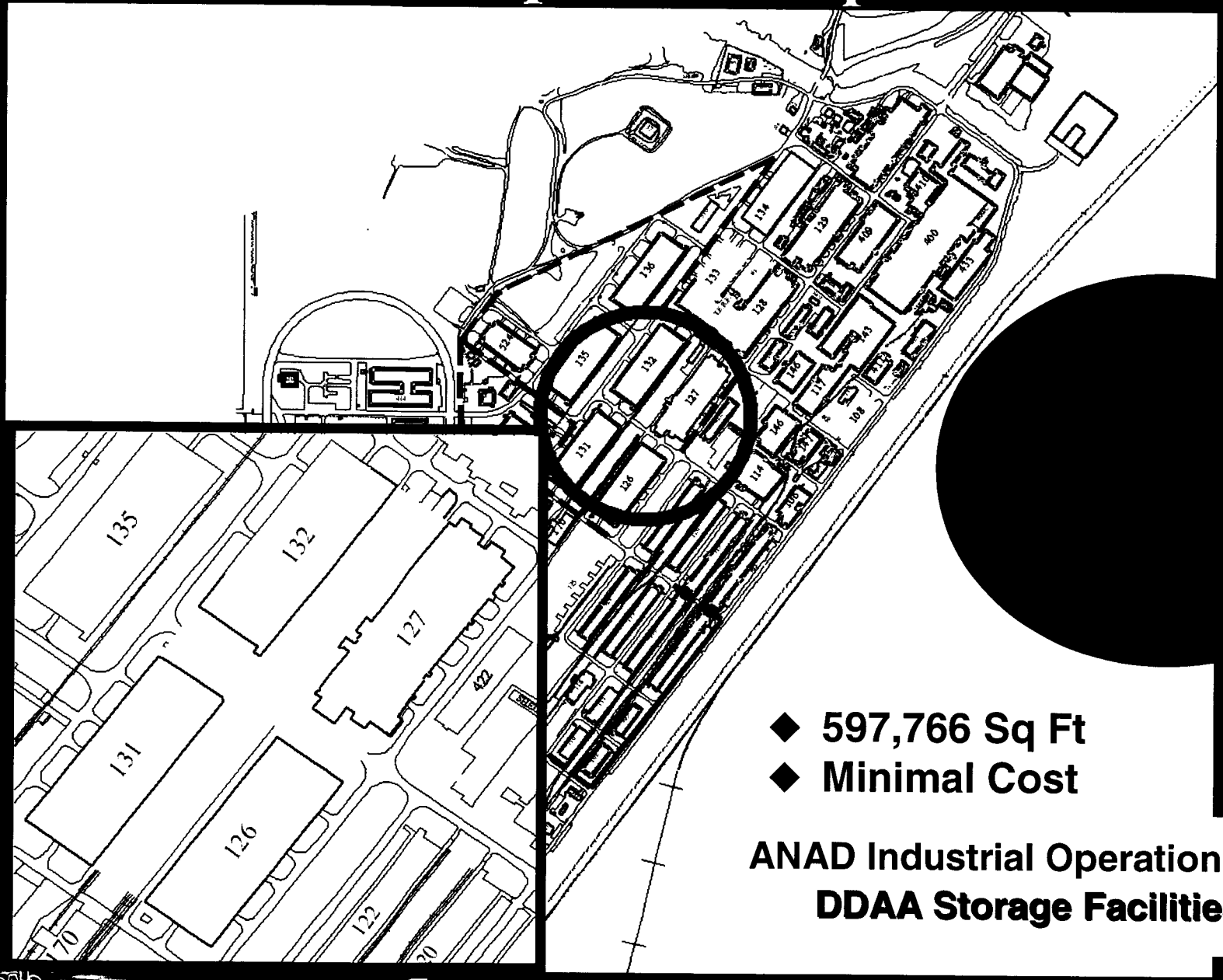
Industrial Expansion Capabilities

Military Construction (MCA) Project: Powertrain Facility

Fiscal Year	FY05
Estimated Cost	$56 Million Facility - 24M Equipment - 32M
Size	142,000 Sq Ft
Payback	6.6 Yrs

Upon Completion of the New Powertrain Complex, Existing Facilities Used to Repair Reciprocating Engines Will Be Available for Other Industrial Uses

Industrial Expansion Capabilities



- 597,766 Sq Ft
- Minimal Cost

ANAD Industrial Operations ☐
DDAA Storage Facilities ☐

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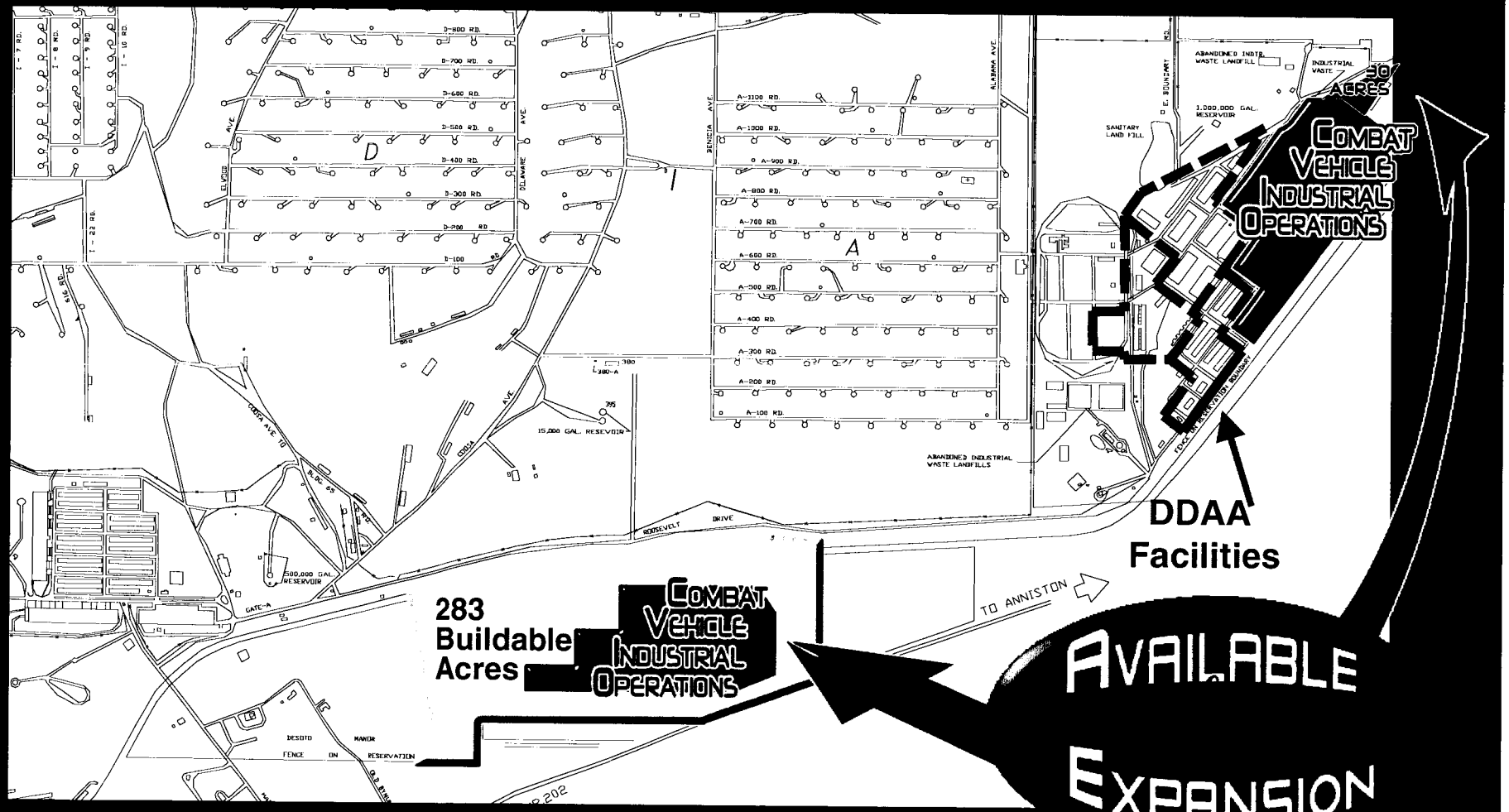
Industrial Expansion Capabilities



INDUSTRIAL MISSION EXPANSION CAPABILITIES

Information Technology

State-of-the-Art Communications Infrastructure

BENEFITS of I3MP Fiber Optic Upgrade:

- 74 Miles of Optic Fiber
- Fiber Increase from 76 to 139 Buildings
- 100% Increase in Bandwidth from 500Mb to 1Gb
- Flexible Expansion
- Internal / External Intrusion Detection
- Integration of IDS & Network Management System
- Real-time Desktop Video Conferencing
- Commercial Television to Desktop
- On-line Interactive Training
- Voice Over IP Capability
- Scheduled & On-demand Broadcasting
- Redundant Voice/Data Routing

Remote DoD Customers:
(Standard Depot Systems Support)

- Blue Grass Army Depot
- Rock Island Arsenal
- Pine Bluff Arsenal
- Watervliet Arsenal

Candidate for ARMY PROCESSING CENTER

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I3MP - Installation Information Infrastructure Modernization Program
IP - Internet Protocol

Environmental Leadership

2000 Alabama Department of Environmental Management Director's Award:
- Pollution Prevention Award Winner

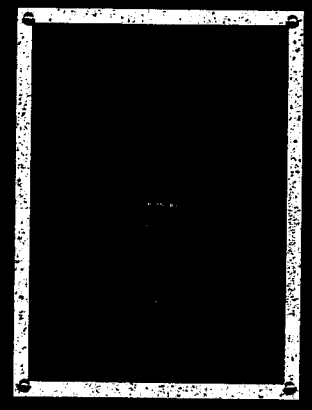
2002 Secretary of the Army Environmental Awards Program:
- Runner-up Pollution Prevention Team Award

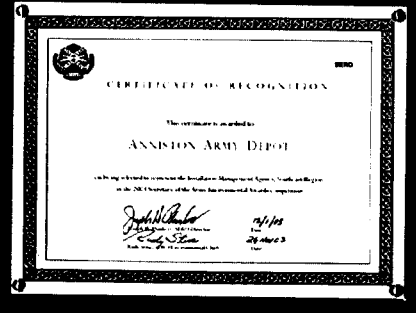
2003 Secretary of the Army Environmental Awards Program:
- Installation Restoration Award

2003 Secretary of the Army Environmental Awards Program:
- Pollution Prevention - Industrial Installation Award

2003 Secretary of Defense Environmental Awards Program:
- Installation Restoration Award

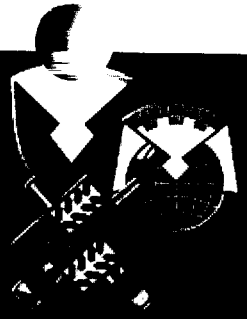
2003 Secretary of Defense Environmental Awards Program:
- Pollution Prevention - Industrial Installation Award





Environmental Awards

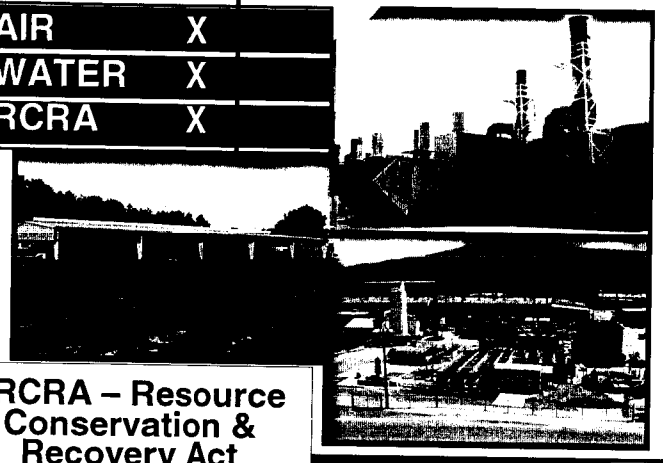
Environmental Compliance



ANAD is Located in an Air Quality Attainment Area

Meets All EPA/ADEM Standards

	Yes	No
AIR	X	
WATER	X	
RCRA	X	



*RCRA – Resource Conservation & Recovery Act

Environmentally Compliant To Operate

BUT... Costly to Clean Up

Facility & Environmental Considerations

Utility	Capacity	FY03 Usage	% of Capacity
Raw Water	Unlimited	338 MG	Unlimited
Treated Water	226.3 MG	119 MG	52.60%
Electrical Systems	30.0 MVA	14.7 MVA	49.00%
Natural Gas	3,650,000 MMBTU	759,428 MMBTU	20.00%
Steam	3128 Mlb/yr	466 Mlb/yr	15.00%
Plant Air	9703 Mcf/yr	1389 Mcf/yr	15.00%
Industrial Sewer	226.3 MG	118.3 MG	52.30%

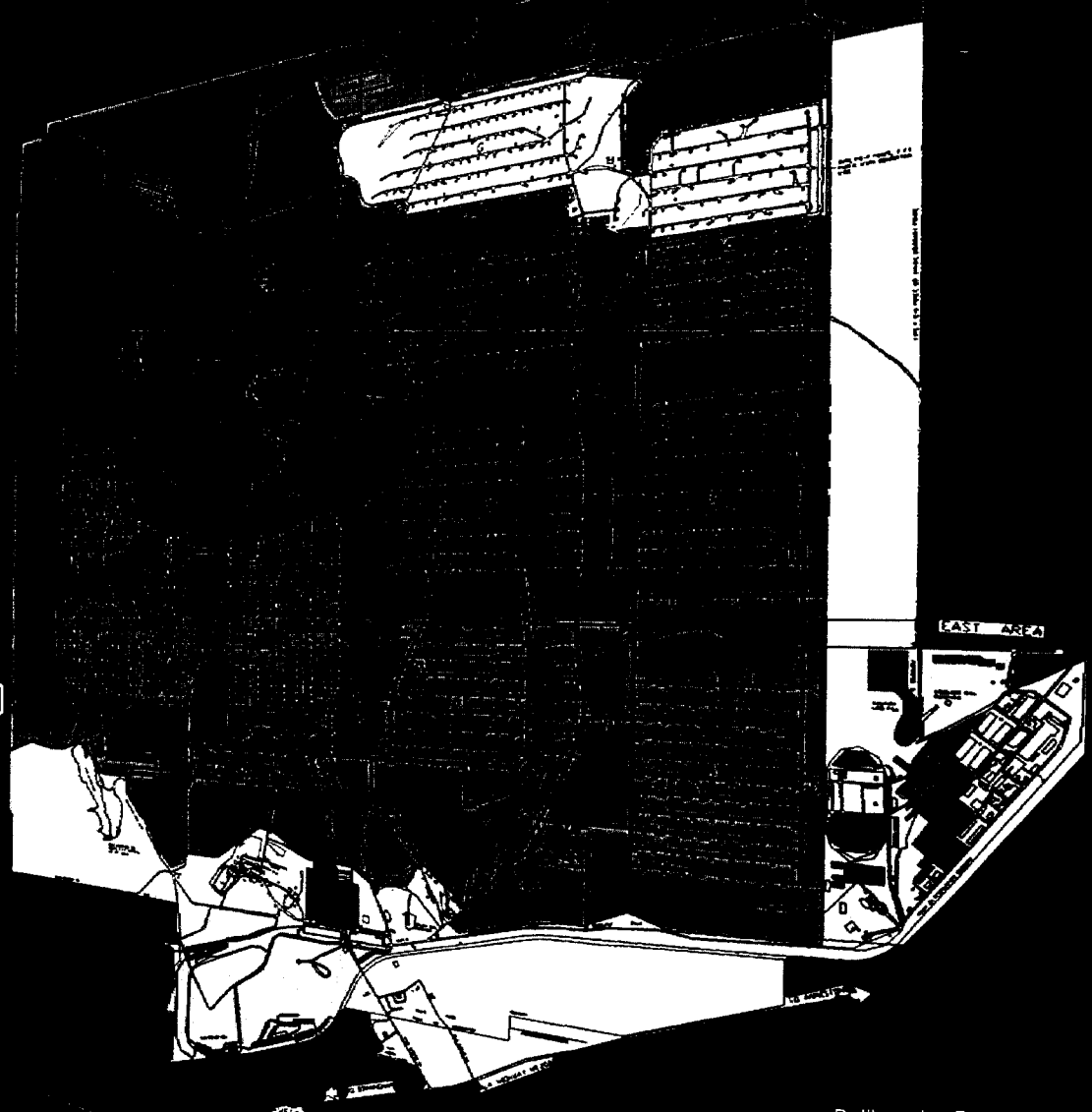
Environmental Clean-Up

Groundwater Trichloroethylene (TCE) Clean-Up

- Superfund Site Since 1989
- Treating Groundwater Since 1990
- Contaminated Groundwater Under Industrial Area
- No Impact on People or Mission

Installation Mission Activities & Tenants

- TACOM-Anniston Army Depot (ANAD)
- Anniston Chemical Agent Disposal Facility (ANCDF) /Chemical Materials Agency (CMA)
- Anniston Chemical Activity (ANCA)
- Anniston Defense Munitions Center (ADMC)
- Defense Distribution Depot Anniston (DDAA)



INTERDEPENDENT MULTI-MISSIONS

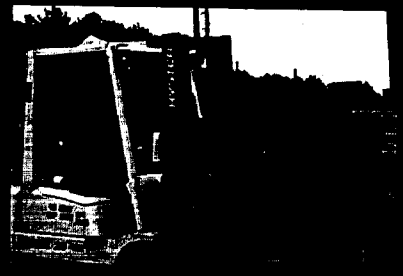
Anniston Defense Munitions Center (ADMC)

MISSION

Receive
Inspect
Renovate
Modify
Demilitarize
Issue
Ship
Conventional Ammunition & Missiles

DoD's Only Missile Recycling Center

Emergency Contingency Stocks for the 75th Rangers



ANNISTON DEFENSE MUNITIONS CENTER

Army
Navy
Marine Corps
Air Force

STATS

1124 Ammo Storage Igloos of which:
- 478 are Stradley Magazine
- 6 Above Ground Magazines

13,160 Acres

110,447 tons of Explosives

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE - SUPPORTING AMERICA'S WARFIGHTERS

Anniston Chemical Activity (ANCA)

ANCA

CMA
CHEMICAL MATERIALS AGENCY

Chemical Materials Agency (CMA)

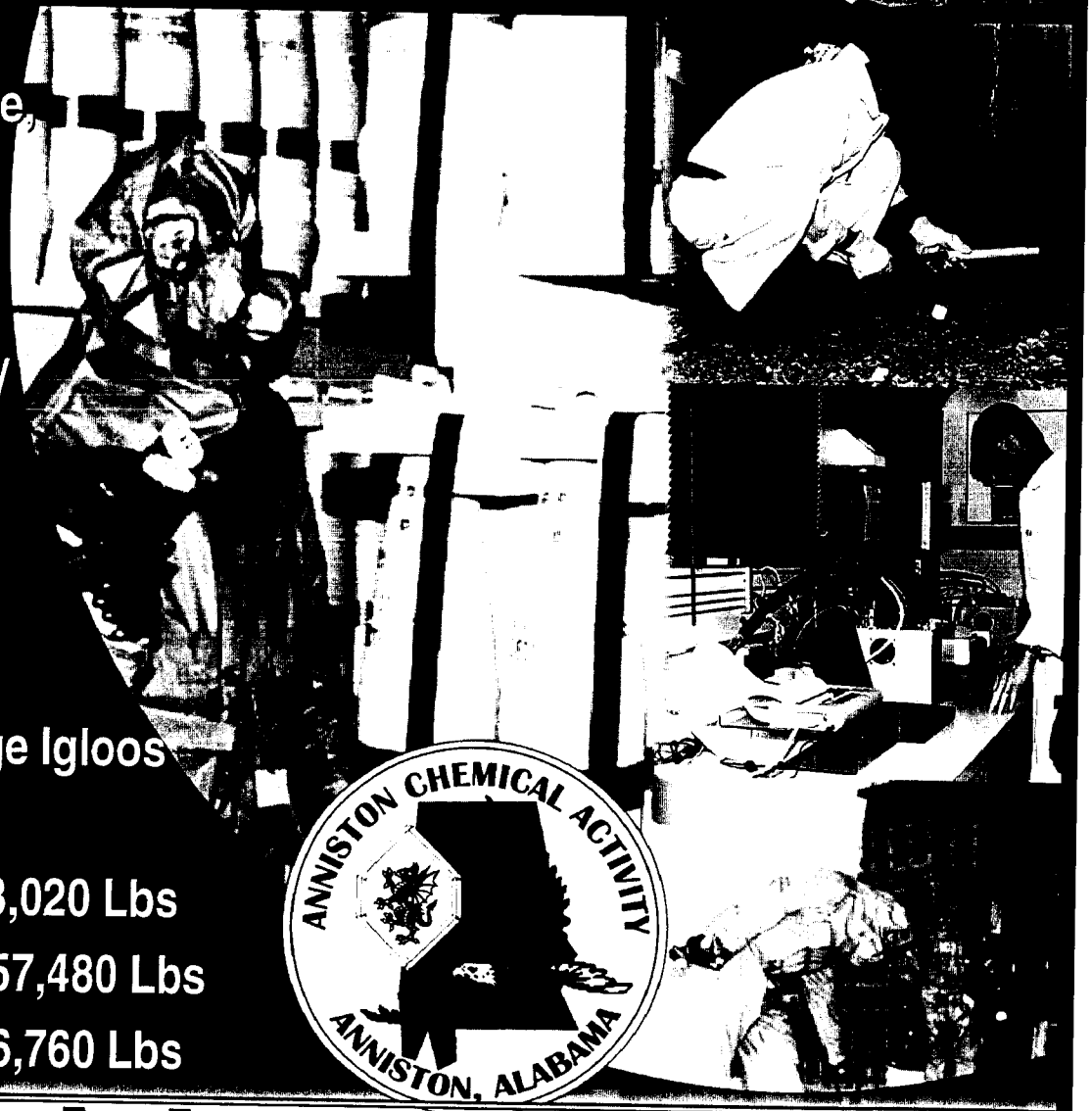
INTERDEPENDENT MULTI-MISSIONS

MISSION

- Safely Manage, Store, & DEMIL Chemical Stockpile at ANAD
- Prepare for & Respond to Chemical Accidents/ Incidents
- Plan, Manage, & Execute Treaty Responsibilities

STATS

- 155 Chemical Storage Igloos
- 762 Acres
- GB Nerve Agent: 873,020 Lbs
- VX Nerve Agent: 1,657,480 Lbs
- Mustard Agent: 1,976,760 Lbs



ANNISTON CHEMICAL ACTIVITY
ANNISTON, ALABAMA

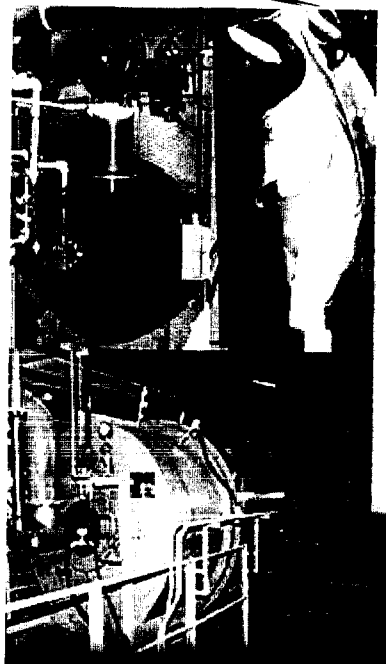
ALL DEPOT MISSIONS BENEFIT FROM ENHANCED CHEMICAL FORCE PROTECTION MEASURES

AMERICA'S COMBAT VEHICLE SUPPORT CENTER

COMMITTED TO EXCELLENCE - SUPPORTING AMERICA'S WARFIGHTERS

Anniston Chemical Agent Disposal Facility (ANCDF)

Chemical Materials Agency (CMA)

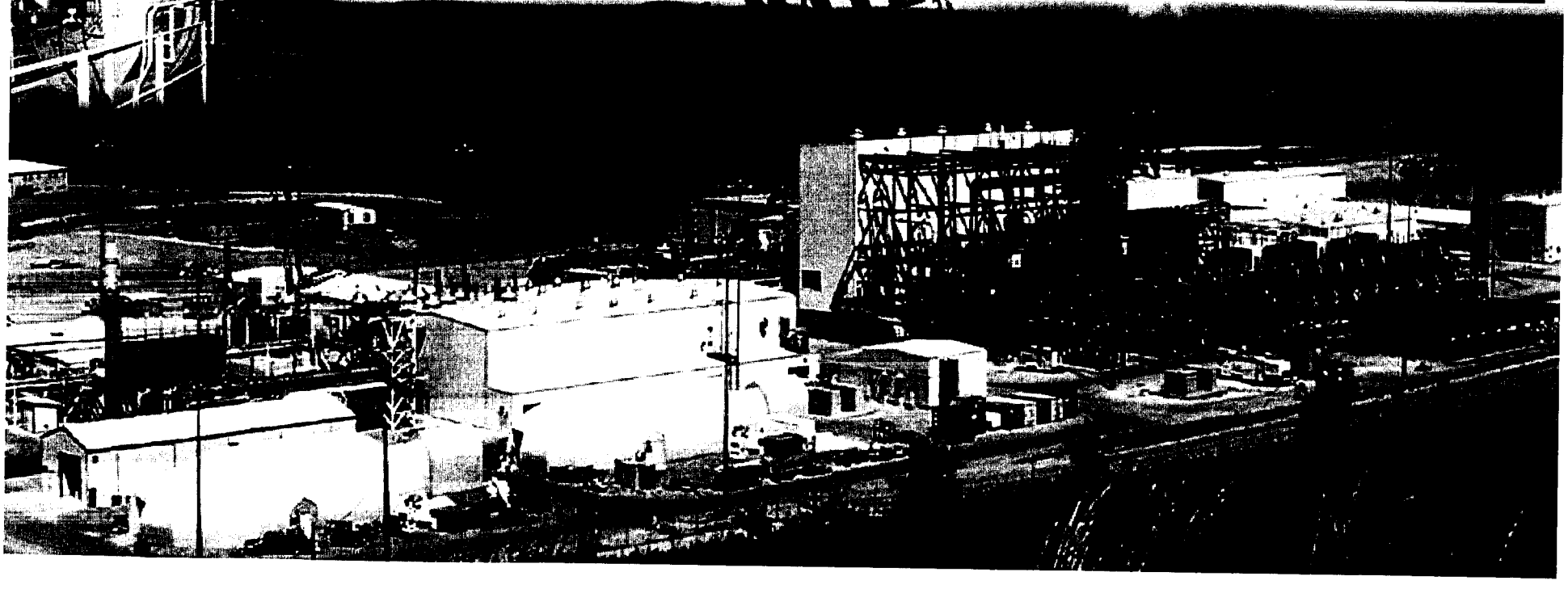


MISSION

Destroy the U.S. Stockpile of Unitary Chemical Weapons while ensuring maximum protection to the environment, general public. & personnel involved in the destruction effort

STATS

35 Acres
Over $1 Billion Current Contract Value (will Increase as project continues)
697 Employees
42.762 Rockets
13.472 8 IN Projectiles
66.506 Gallons of GB Agent (597,860 Lbs) – Safely Destroyed to Date (9 Aug 03 - 29 Mar 05)
Upon Demil Completion, 155 High Security Igloos Available for Other Purposes



Interdependencies of Installation Organizations

Example:
Chemical Accident/ Incident Response Assistance (CAIRA)

COL Raulerson,
On-site Initial Response Force Commander

Command	Response Team Members
Anniston Munitions Center	9
Anniston Chemical Activity/ Anniston Chemical Disposal Facility	157
TACOM – ANAD	246
Medical Clinic MEDDAC	17
Westinghouse	5
TOTAL	**434**

TACOM-ANAD
Plays a vital role in Accident/Incident Response

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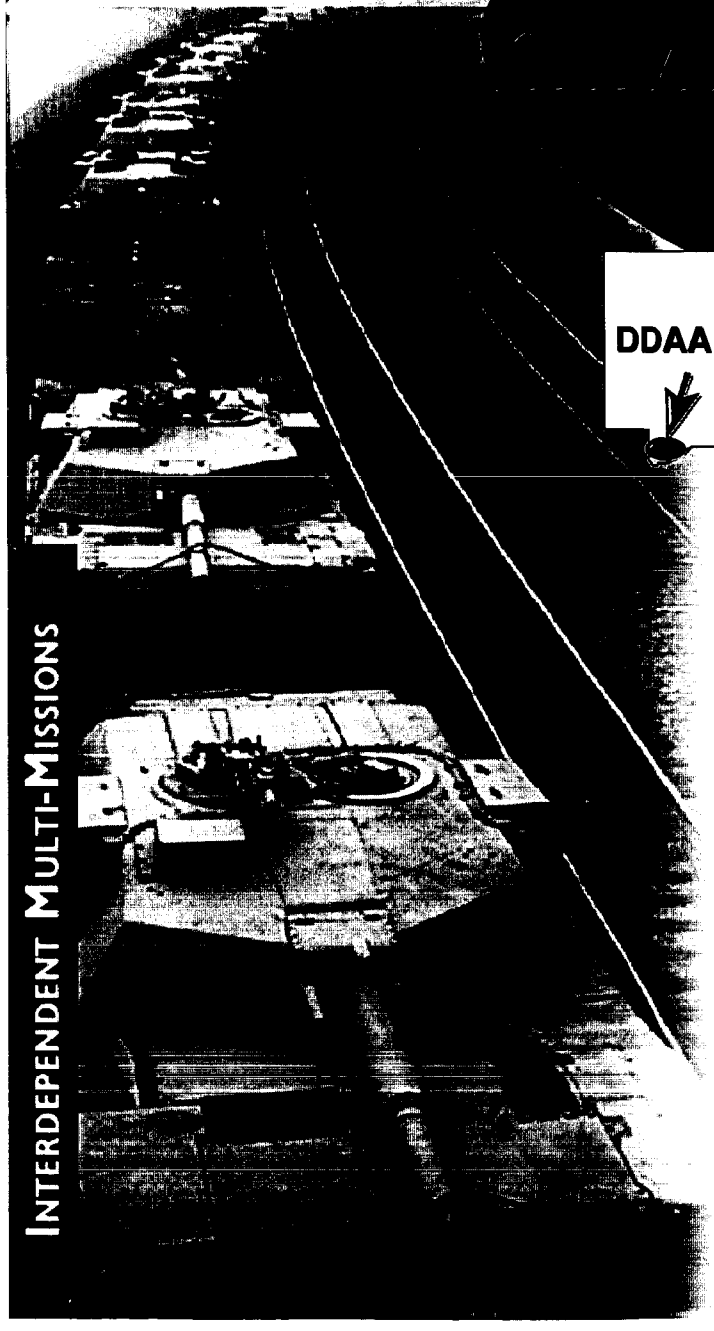
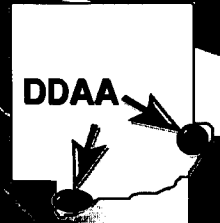
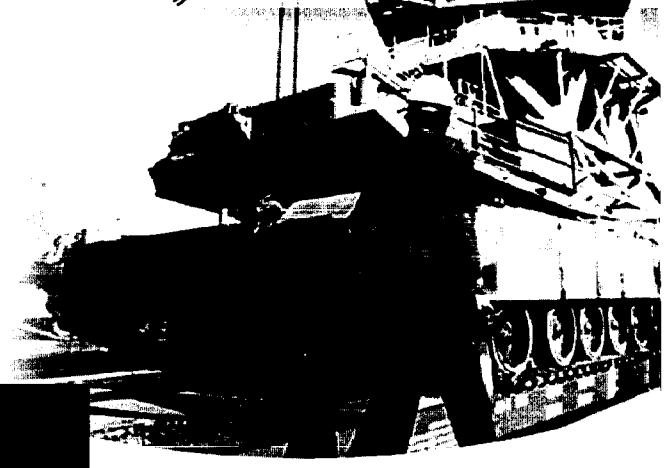
Defense Dis[illegible] Depot Anniston, Alabama







MISSION

Supply Support to ANAD

Repository & Worldwide Distribution for Department of Defense Small Arms

CONUS Depot for World Wide Distribution of Ground Combat & Combat Support Weapons Systems

STATS

Storage Space:

5.3M Sq Ft
- 2.4 Million Covered
- 2.9 Million Outside

218 Assigned Strength

$7.2 Billion Inventory

4.6K End Items In Storage

761K Weapons in Storage

34K National Stock #'s in Storage

INTERDEPENDENT MULTI-MISSIONS

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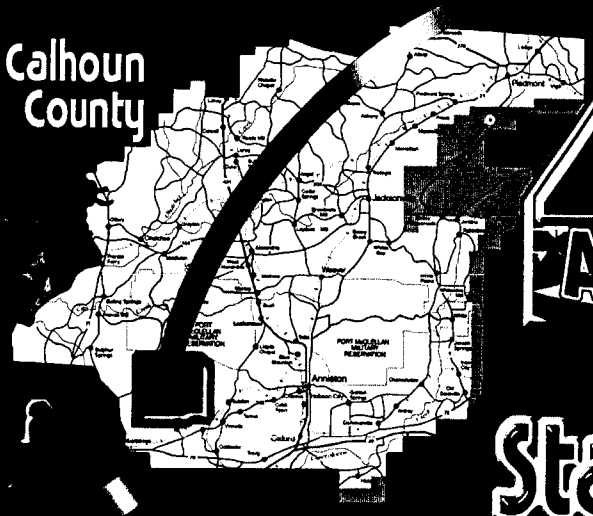
Other Tenants

Interdependent Multi-Missions

Calhoun County

Alabama



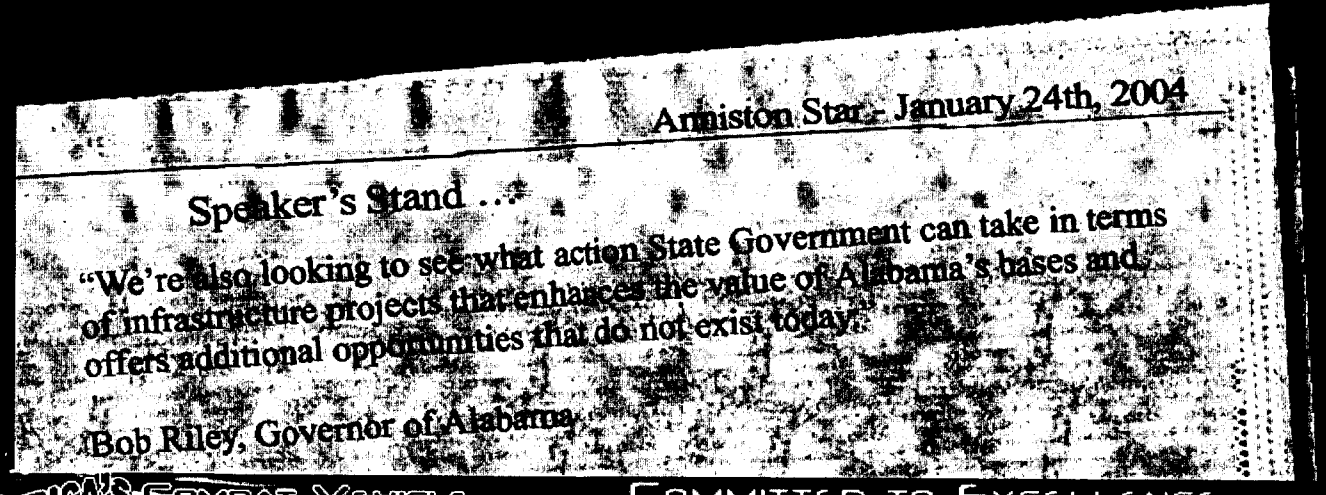
State & Local Community Relations

State Support

5 Lane Road Access to Interstate 20 (almost complete) $27 Million

Co-Op Education Teachers ($126,173 Annually)

Planned 4-Lane of Leatherwood Road for Depot Transportation North - $25 Million



Anniston Star - January 24th, 2004

Speaker's Stand ...

"We're also looking to see what action State Government can take in terms of infrastructure projects that enhances the value of Alabama's bases and offers additional opportunities that do not exist today."

Bob Riley, Governor of Alabama

COMMUNITY RELATIONS

Local Community

Local Support

- Friends Of The Depot
  Focus: To Improve Depot Military Value
- Calhoun County Chamber of Commerce
  - Full Time Military Liaison
  - Military Affairs Committee
  - Forward Calhoun County & Economic Development (Defense Focus)
  - CEO (Public- Private) Defense Roundtable
  - Commercial & Public Defense Manufacturing Consortium

Local Expansion Capability

- Utilities
  - Water – Additional 120,000 People
  - Sewage – Additional 50,000 People
  - Electrical – Additional 2,000 Homes
- Schools –
  - Additional 3,400 Students
- Homes/Realty –
  - 1,500 Homes on the Market

COMMUNITY RELATIONS

ANAD
Economic Contributions

Economic Impact *of* ANAD *on* Calhoun County & Surrounding Counties 2004: *Summary

ANAD is the Largest Employer in a Six County Area

Local Unemployment 4.7%
Local Annual Salary $27k

	Contributions	% of Local Economy / Employment
Total Economic Impact	$1.5 Billion	11%
Impact on Local Business Property	$278.6 Million	17%
Impact on Local Employment	23,126	12%
Impact on Local Governments (Net Gain)	$21.6 Million	
Impact on Financial Institutions	$96 Million	

Largest employers in Calhoun County

1 Anniston Army Depot 5,300*
2 Regional Medical Center 1,400
3 Calhoun County Schools 1,380
4 Jacksonville State Univ. 979
5 North American Bus Ind. 700
6 Springs Industries 650
tie Werner Co. 650
8 Stringfellow Hospital 430
9 United Defense, L.P. 425
10 Lee Brass Co. 400
tie Bostrom Seating 400

Source: Calhoun County Chamber of Commerce, preliminary numbers, Feb. 18, 2004.
*Includes tenants and contractors.

David Boos/The Anniston Star

Prepared by: JSU JACKSONVILLE STATE UNIVERSITY™

COMMUNITY RELATIONS

Support to the Community

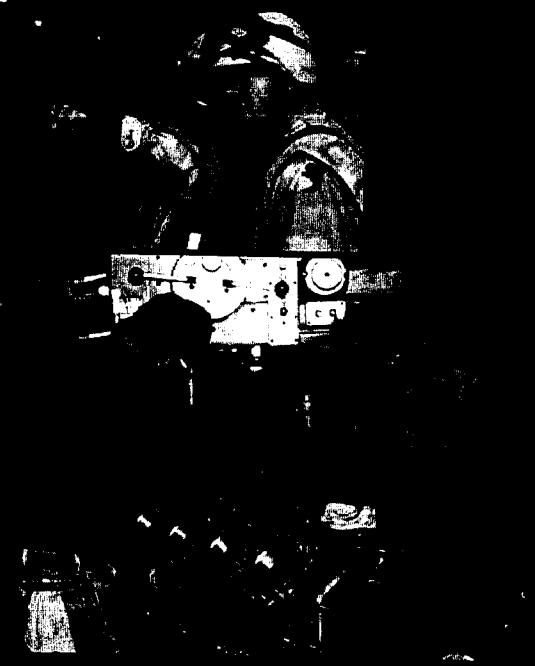
ANAD – Other Contributions

- State's Largest Blood Donor – 14,250 Gallons (Cumulative)
- State's Largest Aphaeresis Donor
- Combined Federal Campaign (CFC) Contributions
  FY02 & FY03: Over $322,000.00
- Christmas Cheer FY03: $32,000.00 in Donations, Along With Over 8,000 Lbs. of Food & Clothing
- 58 Depot Grade School Mentors
- Adopt-a-school - Coldwater Elementary
- 212 Local Area Co-op Students Since FY97
- United Way "Day of Caring"
- Award Winning Handicap Employer
  Government & Contractor
- Camp Connection
- Army Emergency Relief Fund
- Summer Hire Program

Community Relations

Reserve Component Support

JOINT



Ft. McClellan & Pelham Range

Anniston provides personnel support to Title V Civilians at the Alabama National Guard Training Center

- Equal Employment Opportunity
- Legal
- Compensation
- Morale, Welfare & Recreation
- Memorandum of Agreement with Alabama National Guard for storage of Ammunition

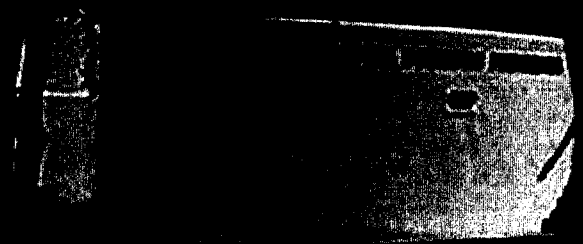
JOINT SERVICE SUPPORT

Homeland Support

JOINT

Center of Domestic Preparedness

- Located 10 miles from ANAD
- Chemical Accident / Incident Exercise Monitors
- Memorandum of Agreement for Mutual Support



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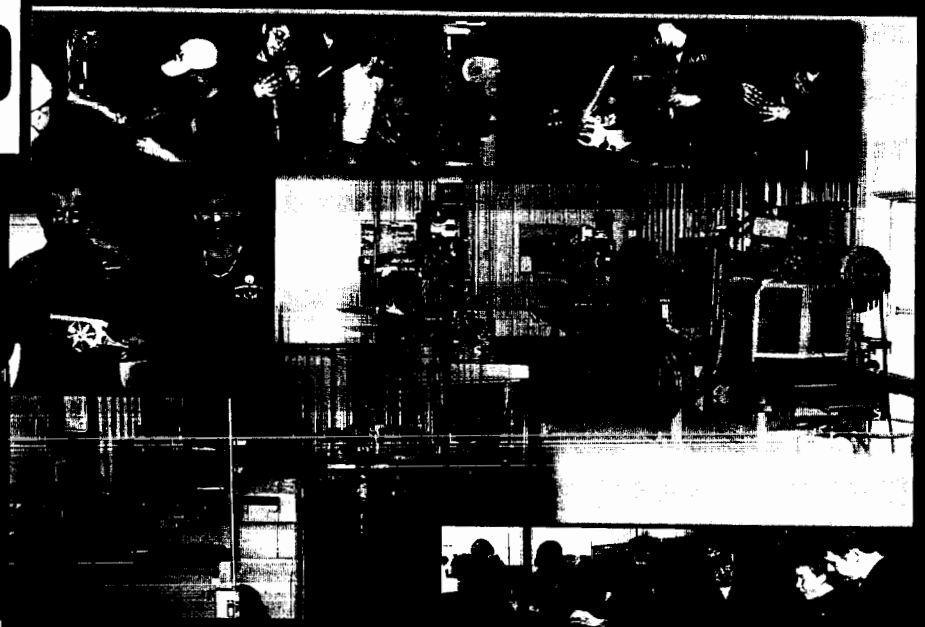
Performance

and [redacted]

Business Practices

Workforce Revitalization

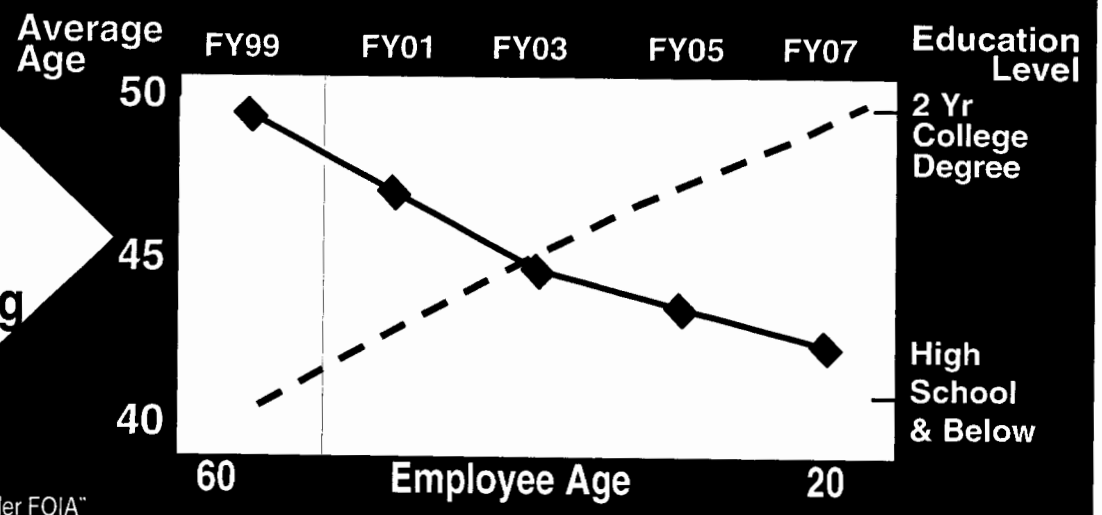


Mercedes
Co-Op Program
Modeled after ANAD

- On-Site Technical Education
- 70% of Students Received Technical College Scholarships
- 212 Students Now in Training or Full Time Employees
- 47 High Schools and 2 Technical Colleges In a 35 Mile Radius
- 5 State & 2 National Competition Winners
- 12 Students currently enrolled in the University Program
- 1,541 New Hires Since 2000

Bottom Line...

ANAD Workforce Average age is falling *while* Education Level is Climbing



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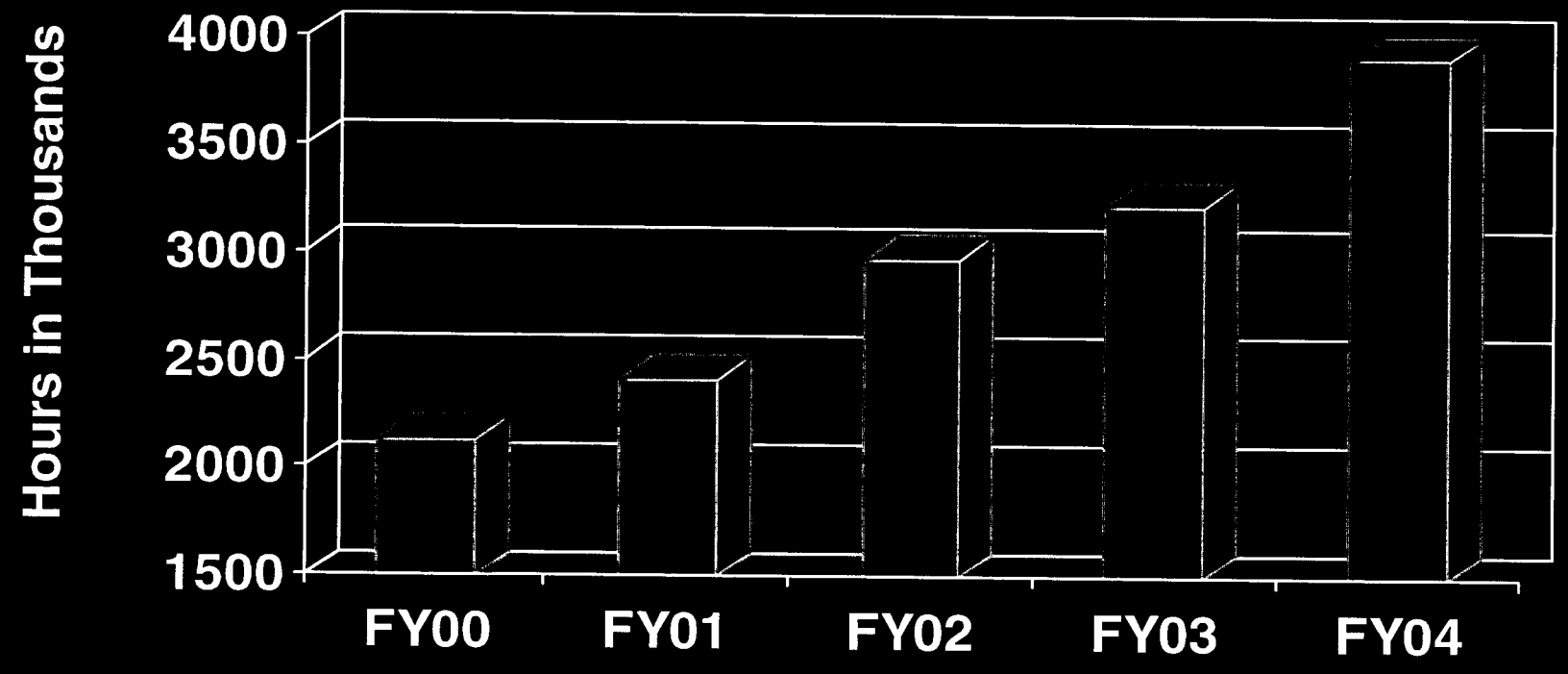
ANAD
Direct Labor Hours

FY00 - FY04



FY 03/04/05 Workload

Executed DLH
FY01 – 2.4M
FY02 – 2.9M

Whrs (M)

	FY03	FY04	FY05*
Carry-in	.699	1.411	1.239
New Order Base	3.923	3.781	6.321
Total Projected	4.622	5.192	7.560
Execution	3.223	3.965	5.515
Carry-out	1.399	1.277	2.045
Equivalent Months	4.2months	3.4months	5.2months

* Includes Potential .5M MHRS Contractor Execution

Combat Vehicle *Programs*

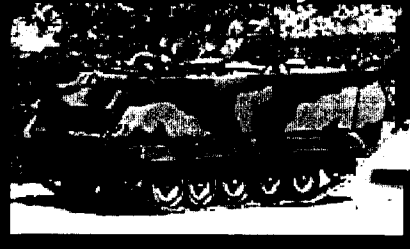
ITEM	PROGRAM QTY: Total FY03	RESET FY03	Total FY04	RESET FY04	Total FY05	RESET FY05
M1A2 SEP	103				73	37
M1A1 AIM	130		125		120	
M1A1 OVERHAUL	68		64		99	20
M88A1	103	18	88	17	247	92
M60A1 AVLB	13	5	23	17	21	7
ABV (Assault Breecher Vehicle)			3		1	

Combat Vehicle

Programs Cont'd

ITEM	PROGRAM QTY Total FY03	RESET FY03	Total FY04	RESET FY04	Total FY05	RESET FY05
M113 FOV Partner	97		92		570	150
M113 FOV ORGANIC	33	33	14		135	135
Main Battle Tank			24		32	
M9ACE	31		47	28	117	21
FAASV	16		52	18	111	46
M109 Paladin	3		20		35	35
M198 Howitzer	6		18		28	

M113 Family

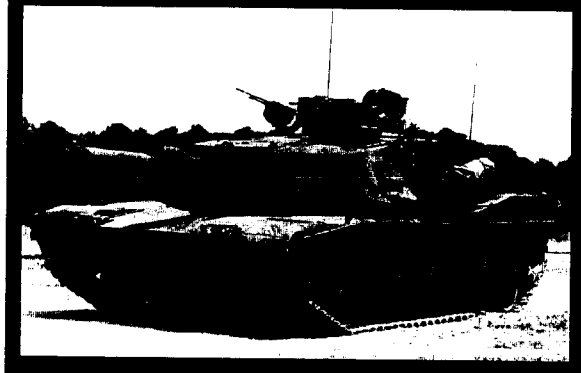


M9ACE

M198 Howitzer

Marine Corps Workload

M1A1 Overhaul



FY03 – 16 Vehicles Completed - Sep 03
FY03 – 46 Vehicles Completed - FY04
FY04 – 8 Vehicles Completed - FY04; 56 Vehicles Carried into FY05
FY05 – 79 Vehicles
FY06 – 56 Vehicles
FY07 – 74 Vehicles

Assault Breacher Vehicle (ABV)

FY03 – 3 Programs
- 1 -Program Manager
- 1 -Tech Manuals
- 3 - Fab of ABV Turret

FY03 - ABV Overhaul (Qty 3)
FY04 – FY03 Program Worked in FY04 (Program Complete)
FY05 – Full Production (Qty 4; 1 New, 3 Overhaul)
FY06/FY07 – Qty 25

Expeditionary Assault Bridge (EAB)

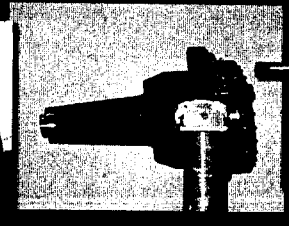
FY05 – 1 Vehicle
FY06 – 3 Vehicles

Subassembly *Programs*

ITEM	PROGRAM QTY Total FY03	RESET FY03	Total FY04	RESET FY04	Total FY05	RESET FY05
M1 Turbine Engine (RTS)	747		533		805	
M1 Turbine Engine (VS)	247		223	5	352	57
M1 Rear Module	347		117		9	
M1 Forward Module	211		56		6	
M1 Transmission	351		220		353	
M1 Reduction Gearbox	104		39		110	

M1 Turbine Engine

M1 Transmission



M1 Rear Module

M1 Reduction Gearbox

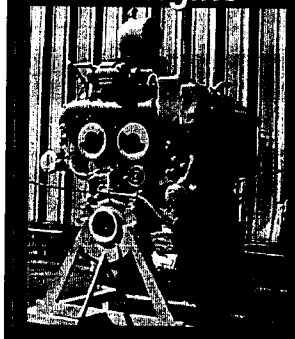
M1 Forward Module

RTS - Return to Stock
VS - Vehicle Support

Subassembly *Programs* Cont'd

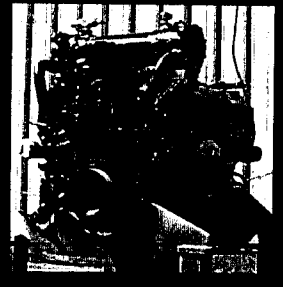
ITEM	PROGRAM QTY Total FY03	RESET FY03	Total FY04	RESET FY04	Total FY05	RESET FY05
1790 Engine (RTS)	445		307		456	
1790 Engine (VS)	116	23	128	51	285	106
6V Engine (RTS)	1,171		155		813	
6V Engine (VS)	33	33	17	3	135	135
8V71T Engine (RTS)	256		164		204	
8V Engine (VS)	50		119	36	263	102

6V Engine



8V Detroit

8V Cummins



1790 Engine

RTS - Return to Stock
VS - Vehicle Support

Small Arms

ITEM	PROGRAM QTY Total FY03	RESET FY03	Total FY04	RESET FY04	Total FY05	RESET FY05
Launcher Grenade M203	1,573		2,890	1,515	1,058	860
Launcher Grenade	30		20	20	300	300
MG CAL50 M2 FLEX	644		1,587	1,440	8,648	8,528
MG CAL 50 M2 HB FIXED	150		1,057	1,000	1,000	1,000
MT TRI 7.62 MM M122	630		1,702	1,700	715	715
MT TRI CAL 50 M3	412		1,415	1,300	656	656
M16A2 Rifle	9,467		22,430	21,526	20,832	20,832
M16A4 Rifle			539	539	1,080	1,000
Rifle 5.56 MM M4			533	533	1,416	1,416
Squad Auto Wpn	1,009		2,038	1,000	2,689	2,629
Pistol 9MM	2,898		15,269	15,133	3,311	3,311
M240					839	839
M240B			457		1,000	1,000
M240C			149		867	867
TOTAL	16,813		50,086	45,706	45,411	43,953

Mission Performance & Efficiencies

FY	Workload (Million Work-Hours) Planned	Actual	Net Operation Results (Profit)
2001	2.218	2.409	$ 15.1M
2002	2.443	2.971	$ 38.8M
2003	2.905	3.223	$ 40.7M
2004	3.910	3.965	$ 51.6M
		TOTAL	$ 146.2M

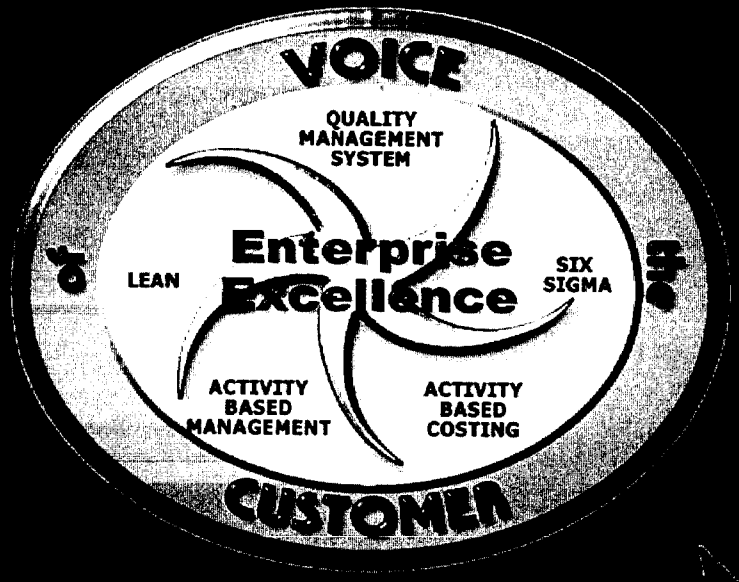
All Profits Returned to Customer Through Reduction in Future Year Rates

FY05 & Out-Year Workload

	FY05	FY06	FY07	FY08
Budgeted Wrkload	6.705	3.858	3.335	2.437

Toyota (TPS)

Motorola



EFFICIENCY

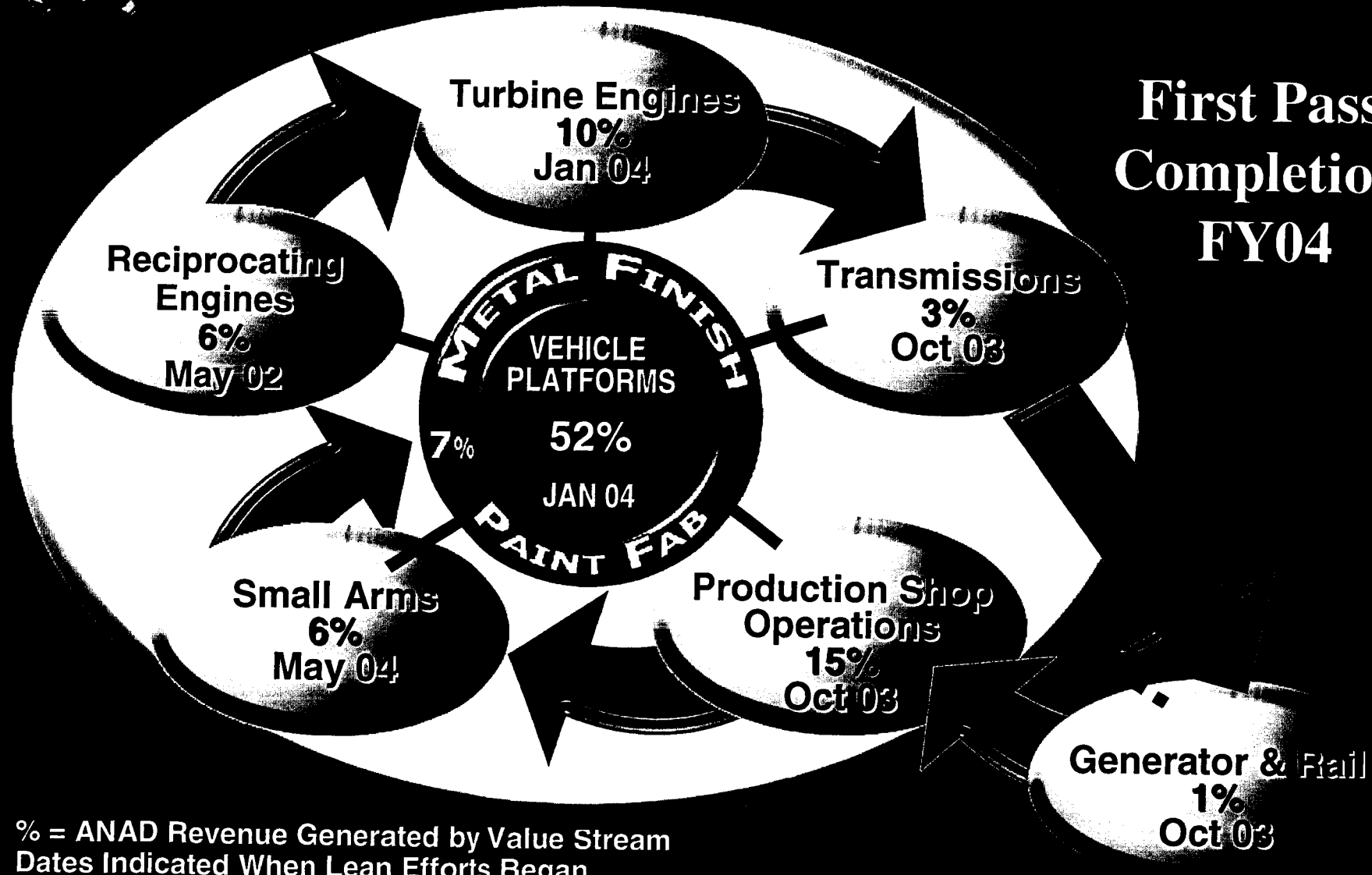
EFFECTIVENESS

LEADERSHIP COMPETENCIES

e.g.Achieve Global

ANNISTON BUSINESS SYSTEM

Lean Improvement Strategy



First Pass Completion FY04

% = ANAD Revenue Generated by Value Stream
Dates Indicated When Lean Efforts Began

Process Optimization Initiative

Engaged VALUE STREAMS

TURBINE

ADMIN

RECIPROCATING

DRIVE TRAIN

DRIVE TRAIN

VEHICLE

SUPPORT

OPERATIONS

238 Teams

ACTIVITY

901 Team Members = 1242 Employees Affected

Projected Cost Savings in FY04	$ 6.951M
Customer Savings in FY05	$10.80M
Customer Savings in FY06-09	$60.10M

Public - Private Partnering

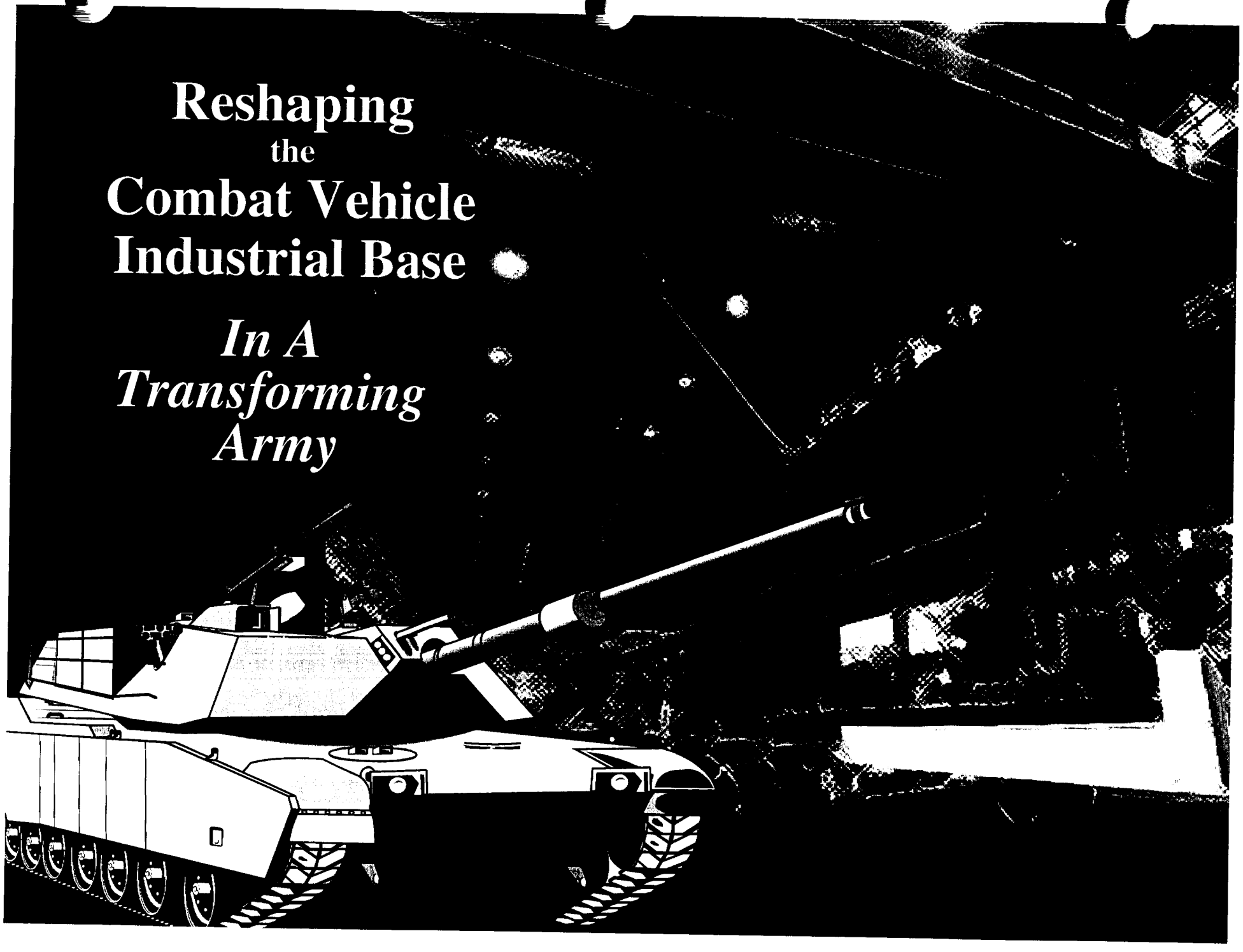
ANNISTON ARMY DEPOT
WEAPONS ♦ COMBAT VEHICLES ♦ AMMUNITION

America's Combat Vehicle Support Center

To Plan, Coordinate and Implement Marketing and Business Strategies Targeted at Private Industry, Major Commands and Other Services

Reshaping the Combat Vehicle Industrial Base

In A Transforming Army



Environment -
Past & Present

Competitive
vs
Cooperative

Independent

Service
Contractor

OEM

Public
vs
Private

OEM

ANAD

OEM

Best of
Both
Worlds

Protects
Organic/Private
Sector Core
Capabilities

Virtual
Business
Relationships

Common
Fence
Line

Reduction of
Total Combat
Vehicle
Infrastructure

Encompasses
Primary Elements
of Combat Vehicle
Industrial Base

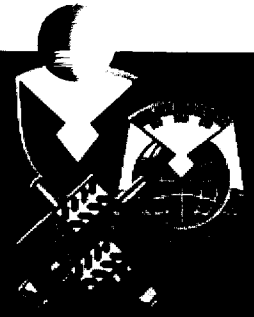
SUPPORTS ARMY TRANSFORMATION

Contractor Benefits

COMPETITIVE PRICES

FACILITIES

EQUIPMENT



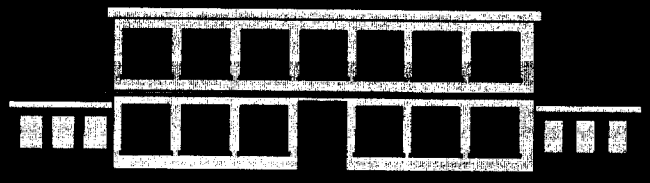
PARTNERING + BUDGET = SUSTAINED CORE

Bottom Line

Public/Private Partnering

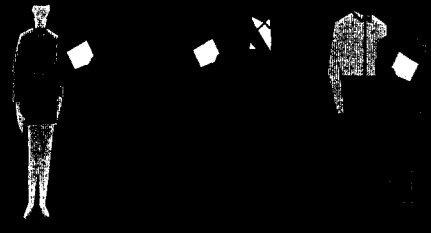
PROGRAMS $548 M
MANHOURS 4.4 M

Facility Utilization
216K Sq. Ft.



COST AVOIDANCE $7M

CAPABILITIES



Government & Contractors provide jobs for the area

Moving With The Army's Transformation

Government Accountability Office Reports

42 Total Army Partnerships
- 33% ANAD

88% of Total Private Sector Investment at ANAD

Highest Percentage of Partnership Workload

AIM XXI Program
- Recognized for Significant New Workload

AGT 1500 Recuperator Program
- Identified As Partnership Achieving Positive Results

ANAD Selected As Initial Study Site Due to Extensive Partnering Experience

---GAO-03-423, April 2003

Partnering *through* Outsourcing

Partnership Program	Direct Labor Hours (DLH)
M113 Family of Vehicles	196,000
Sustainment Support	257,606
◆ M88	144,051
◆ M9ACE	45,008
◆ Paladin	35,549
◆ FAASV	32,998
TOTAL	453,606

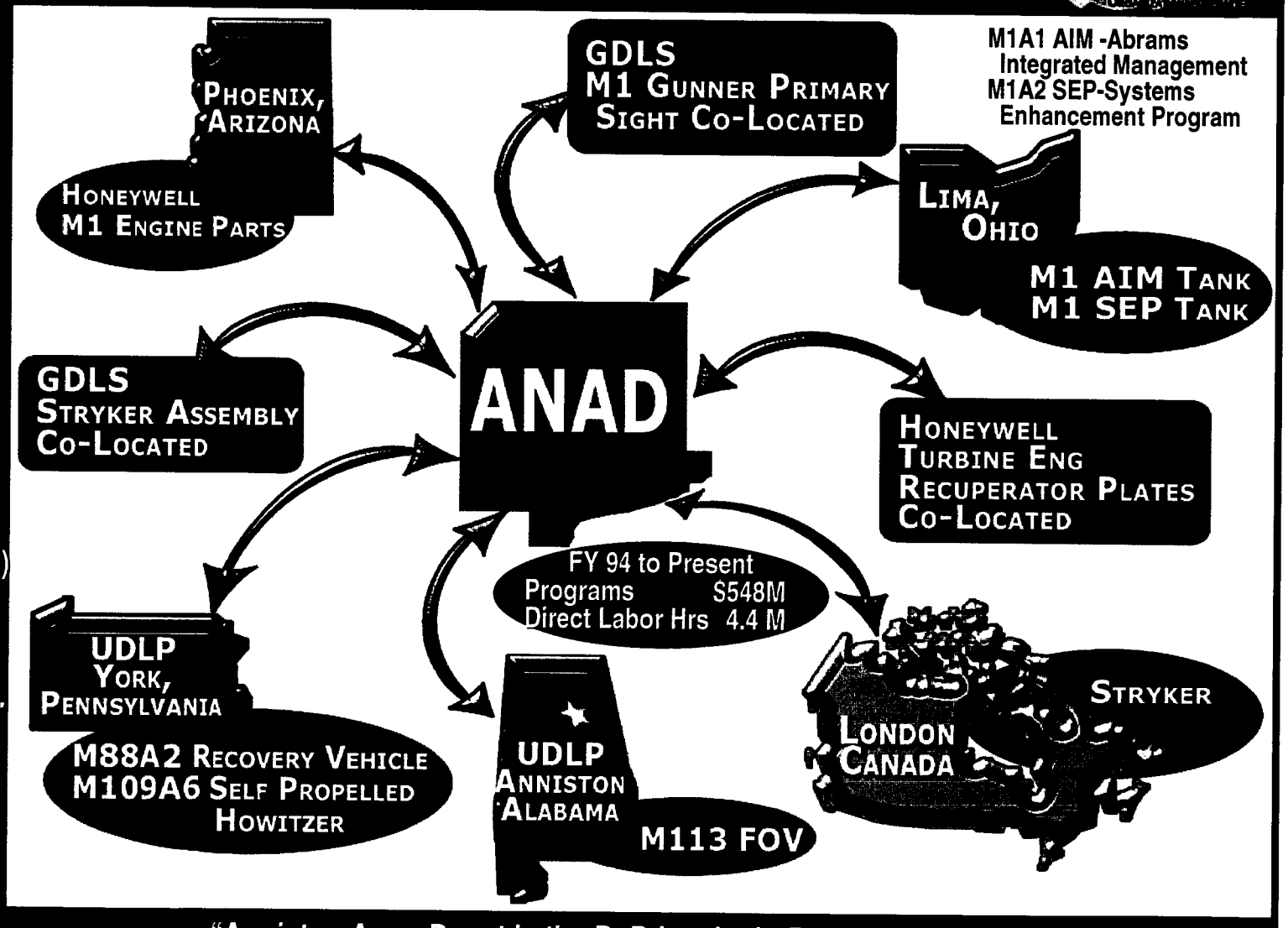
Public-Private Partnering

"Anniston Army Depot... a key and critical asset" (GDLS)

"Anniston Army Depot and UDLP complement each other" (UDLP-Anniston)

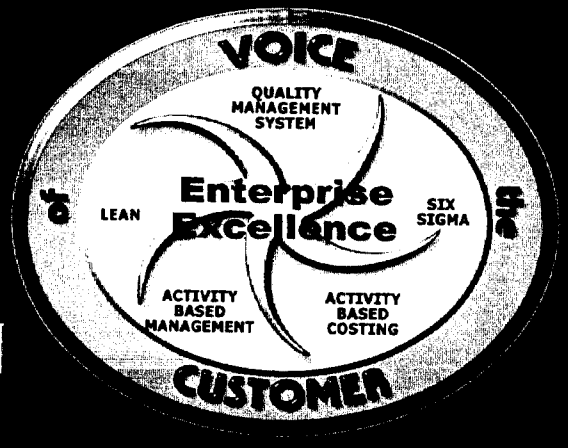
"This Success Is Directly Related to Our Co-location with Our Army Customer" (Honeywell Anniston FY03-Top Performing Site)

Recognized as the Department of Defense Leader in Partnering... Anniston is the Hub of the Public – Private Industrial Network *that Supports...* AMERICA'S COMBAT VEHICLES



"Anniston Army Depot is the DoD Leader in Partnerships"
GAO-03-423 Defense Depot Maintenance Report

Combining Process Optimization & Partnership Efforts

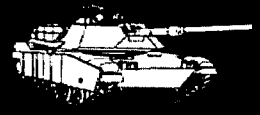


ANAD Combat Vehicle Facility

Disassembly - Re-assembly

M1 Tank Enters Overhaul Process

NEW M1 Tank Leaves Overhaul Process



ANAD Turbine Engine Shop

96,886 Sq Ft

$4.6 Million Investment

Used/Worn M1 Turbine Engine

New/Overhaul M1 Turbine Engine

Parts Including Kitting On-Site

Honeywell

Recuperator Plates

600 FT

Honeywell Recuperator Manufacturing Facility

30,000 Sq Ft Facility

$7 Million Investment

Co-Located, 7.5 Mil Cost Savings Since 1998

Turbine Engine Overhaul is an Integral Part of the M1 Tank Overhaul Process at ANAD!

Innovative Business Practices

"Deliberative Document – For Discussion Purposes Only – Do Not Release Under FOIA"

High Performance & Innovative Business Practices

Mobilization & Forward Support

Preparing to Deploy

Depot Forward (Kuwait / Iraq)

Component Overhaul
HMMWV Service Center
HMMWV Survivability Kits
88 Civilian Soldiers to Date

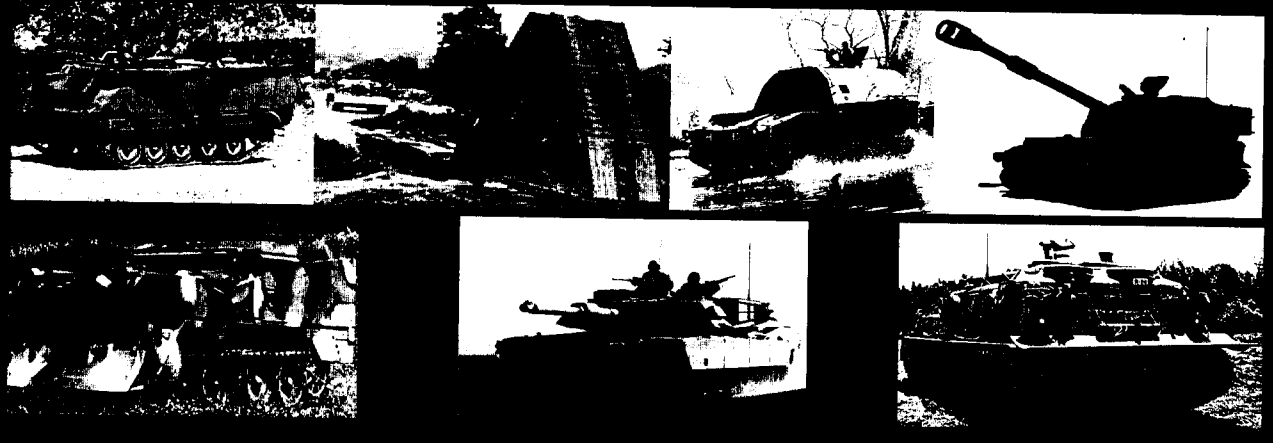
Depot Forward (Ft. Knox)

US Army Armor Center, Fort Knox, KY

RESET

M113	33
M1	10
M109	20
M88	31
M9ACE	9
FAASV	31
AVLB	15
Various Small Arms	46,223

Combat Vehicles



INNOVATIVE BUSINESS PRACTICES

Worldwide Support

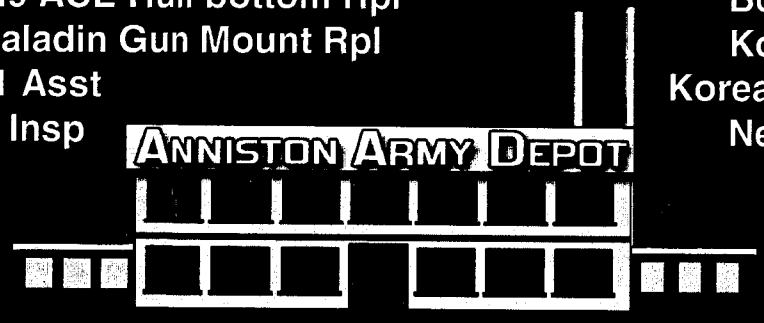
Over 150 missions
(19 OCONUS)
Over 400 personnel

CONUS

Ft Stewart, GA – Army & NG AVLB Rpr
Ft Stewart, GA, NG – M1 Fuel Cell Replacement
Ft. Stewart – DHI, MWO Application
Ft Lewis, WA – Tech Support M198 How
Ft Riley, KS – Towing Eye Replacement
Ft Riley, KS – M1 Eng DS+ Augmentation
Ft Riley, KS – AVLB Rpr
Ft Knox, KY – DHI, MWO Application
Charleston, SC – M60 Port Inspection
Goose Creek, SC – M88 Voltage Conversion
SIAD, NV – ROWPU Repair & Mod
Ft Hood, TX – AVLB Rpr
Ft Irwin, CA – AVLB Rpr
Ft Carson, CO – AVLB Rpr
Ft Carson, CO – M9 ACE H/O
Ft Bragg, NC – NG AVLB Rpr
Ft Polk, LA – AVLB Rpr
Ft Bliss, TX – M1 AIM Inspect
Ft Knox, KY – AVLB Rpr
Tennessee, NG – AVLB Rpr
Various Sites – M58 Fielding

OCONUS

Taiwan – M60 H/O
Egypt – 1790 Eng Insp
Germany – AVLB Rpr & AIM Insp
Germany – M9 ACE Hull bottom Rpl
Germany – Paladin Gun Mount Rpl
Qatar – M1A1 Asst
Germany-M1 Insp
Korea – AVLB Repair
Korea – M58 Smoke
Kuwait – M58 Smoke, FRA, HMMWV
Bosnia – AVLB Repair
Kosovo – AVLB Repair
Korea– M1 Insp
Netherlands – M1A1 Inspection



In Support of
Operation Iraqi Freedom ...

Four Funded Programs

Program	$M	Personnel
Assessment Team	$2	2
HMMWV Service Team	$3.2	1
Forward Repair Activity	$7. 6	22
Maintenance of M1 Vehicles	$2.6	41

In Support of
Operation Iraqi Freedom

Assessment Team - 2 Employees at Camp Arifjan, Kuwait Inspecting/categorizing Secondary Items

HMMWV Service Team - 1 Employee at Camp Anaconda, Iraq Performing Quality Control Functions for HMMWV Service Center

Forward Repair Activity - 22 Employees at Camp Arifjan, Kuwait Supporting Add-on-armor Effort. This Includes Replacing Ballistic Windshield; Installing Air Conditioner/200 Amp Generator; And Application of Ballistic Armor

Maintenance of M1 Vehicles - 41 Employees at Camp Arifjan, Kuwait Supporting 2nd Infantry Division M1A1 Repair/hand-off

HMMWV
Armor Survivability Kits
(ASK)

Total 3,641 Kits

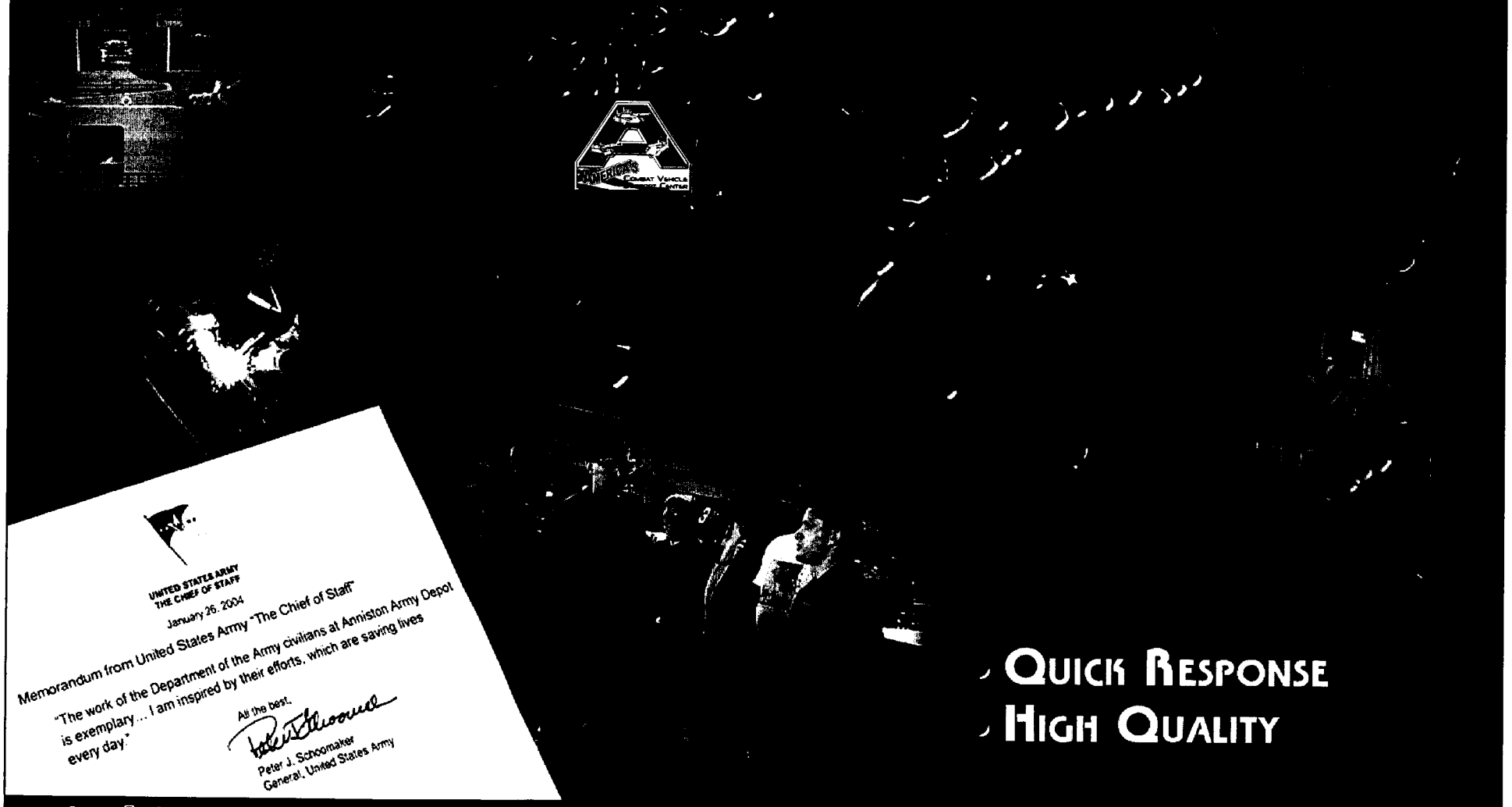
Initial Production Program of 500 Kits Complete
2nd Production Program of 1,435 Kits Complete
3rd Production Program of 87 Kits Complete
4th Production Program of 350 Kits Complete
5th Production Program of 72 Kits Complete
6th Production Program of 309 Kits Complete
7th Production Program of 438 Kits Complete
8th Production Program of 450 Kits In Process

Support

- 24-hours Per Day/ 7 Days Per Week Production
- Personnel Deployed in Theater Performing Kit Installation

High Performance & Innovative Business Practices

HMMWV Armored Door Project…
…A Direct Connection from Anniston to Iraq



UNITED STATES ARMY
THE CHIEF OF STAFF

January 26, 2004

Memorandum from United States Army "The Chief of Staff"

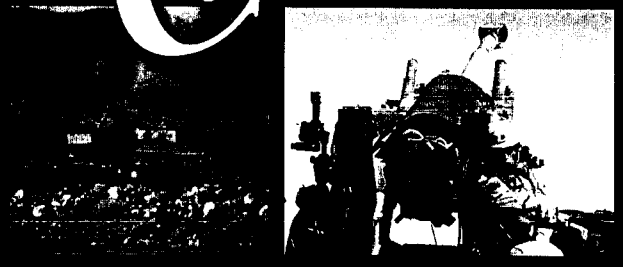
"The work of the Department of the Army civilians at Anniston Army Depot is exemplary … I am inspired by their efforts, which are saving lives every day."

All the best,

Peter J. Schoomaker
General, United States Army

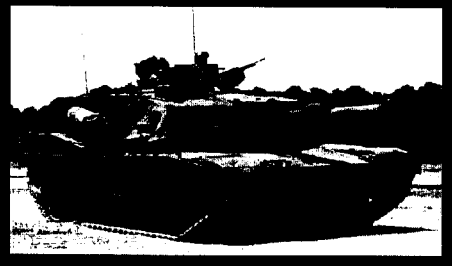
- QUICK RESPONSE
- HIGH QUALITY

Conclusion: ANAD



TOWED & SELF-PROPELLED ARTILLERY

SMALL ARMS



COMBAT VEHICLES

TRANSFORMING

ANAD a Multi-Mission Installation
America's Combat Vehicle Support Center
Excellent Joint Service Support
Supporting a Transforming Force
Innovative Business Practices

...Performing Critical DoD Missions

Anniston Army Depot...

The Engine That Drives The Economy For North Central Alabama

"Proud of the Past ...
While...
Defining Our Future"

"Deliberative Document –
For Discussion Purposes Only –
Do Not Release Under FOIA"

America's Combat Vehicle Support

Table of Contents

Biographies

Installation Description

Mission and Vision

Specification Sheets

- Supported at ANAD
- Supported at Other DoD Installations
- Not Supported an Any DoD Installation

Joint Transformation

Unique Equipment and Facilities

Surge

War Support and History

- Summary of Go-To-War Efforts
- Historical Reports
- Information Paper on Transition of Combat Vehicle Missions (BRAC95)
- Related News Articles

Information Technology

Ground vs Air Turbine Engine

Nichols Industrial Complex Map

Related News Articles

Colonel Alexander B. Raulerson was born in Munich, Germany. He was Commissioned from the Officer's Candidate School, Fort Benning, Georgia in 1983. He earned a Masters of Science degree in Logistics Management from the Florida Institute of Technology in 1992.

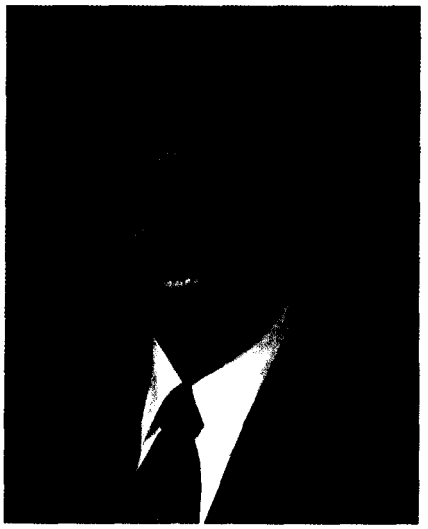
Prior to assuming command of Anniston Army Depot, he was the Chief, Plans, Programs and Exercises (G4) for the Third Army at Fort McPherson, Georgia.

His military education includes; Ordnance Office Basic and Advanced Courses; Combined Arms Services Staff School; Logistics Executive Development Course; Command and General Staff College (C&GS) and the Army War College.

During his 21 year military career, he has held a variety of command and staff positions both stateside and overseas to include tours of duty at Redstone Arsenal, Alabama; The Republic of Korea; Fort Riley, Kansas; Fort Leavenworth, Kansas; Fort Campbell, Kentucky; Fort Bragg, North Carolina and Fort McPherson, Georgia.

Included among his awards and decorations are the Bronze Star Medal; Defense Meritorious Service Medal; Meritorious Service Medal (W/4 OLC); Army Commendations Medal (W/4 OLC); Army Achievement Medal (W/1 OLC); Meritorious Unit Citation; Air Force Outstanding Unit Award; Army Good Conduct Medal; National Defense Service Medal; Southwest Asia Service Medal (W/3 BS); NonCommissioned Officer Professional Development Ribbon; Army Service Ribbon; Overseas Service Ribbon (3rd award); Saudi Arabia Kuwait Liberation Medal; Kuwaiti Kuwait Liberation Medal; Air Assault; Parachutist Badges and the German Parachutist Badge.

Colonel Raulerson is married to the former Hye Kyong Choi of Andong, Korea. They have two daughters, Cynthia, who is a student at Washington State University, and Jessica, a student at the University of Florida.



JACK E. CLINE
Deputy to the Commander

Jack Cline is a native of Anniston, Alabama. Upon his honorable discharge from the United States Navy in 1979, he came to work at Anniston Army Depot March 1981.

Mr. Cline began his career at the depot as an Electronics Worker in the Missile Guidance Branch, Directorate of Maintenance. He also worked in Directorate of Mission Plans and Operations as a Planner. In 1991 he became the Division Chief for Weapons. 1996 he became the Deputy Director for Production. In 1999 he served as the Division Chief for Tracked Systems. In 2001 he was promoted to Director of Production. Mr. Cline is currently the Deputy to the Commander.

Mr. Cline has a Bachelor of Science Degree in Management and Leadership. He has also attended Army Management Staff College, Fort Belvoir, VA., Leadership 2000, Personnel Management for Executives, and Organizational Leadership for Executives.

His military experience includes training in Interior Communications aboard the Aircraft Carrier U.S.S. Saratoga in the United States Navy.

Married to the former Jeni Guthrie of Oxford, Alabama, he has one daughter Beth, a teacher and she is married to Brad a Youth Minister. He has one step-son, Matthew, who is a Chemical Engineer.

Resume of Service Career
of
Jack E. Cline

Date and Place of Birth: 4 September 1957, Colorado Springs, CO

Civilian Service: 27 years

Military Service: United States Navy, 4 years

Present Assignment: Deputy to the Commander

Education:

Bachelor of Science in Management and Leadership

Army Management Staff College, Ft. Belvoir, VA

Career Assignments
of
Jack E. Cline

From	To	Assignments at Anniston Army Depot
1981	1982	Electronics Worker
1982	1984	Electronics Mechanic
1984	1987	Electronic Integrated Systems Mechanic
1987	1990	Electronic Integrated Systems Mechanic Leader
1990	1991	Production Controller (Electronic)
1991	1992	Electronic Integrated Systems Mechanic Leader
1992	1993	Electronic Integrated Systems Mechanic Foreman
1993	1995	Electronic Integrated Systems Mechanic Supervisor
1995	1996	Production Manager
1996	1997	Electronic Integrated Systems Mechanic Supervisor
1997	1998	Maintenance Production Coordinator
1998	1998	Electronic Integrated Systems Mechanic Supervisor
1998	2000	Heavy Mobile Equipment Mechanic Supervisor
2000	2001	Electronic Integrated Systems Mechanic Supervisor
2001	2005	Director of Production
Currently		Deputy to the Commander

RAY MINTER
Chief of Staff

Ray Minter is originally from Piedmont, Alabama where he graduated from Piedmont High School in May, 1969 and subsequently entered the U.S. Air Force the following December. After serving three years and eight months on active duty he was honorably discharged in 1973.

Following his discharge, in the fall of 1973 he enrolled at Jacksonville State University where he subsequently completed both is undergraduate and graduate work receiving a Bachelor of Arts, Bachelor of Science, Masters of Science and Masters of Public Administration degrees.

Then he was a teacher in the Calhoun County Public School System prior to being appointed the Deputy Secretary of State of Alabama, a position he held for two and one half years. His next appointment was as Chief of Staff for the Third Congressional District of Alabama for then Congressman Glen Browder. His employment in the U.S. House of Representatives continued for eight years until Congressman Browder retired. He then worked for Westinghouse, Anniston for 11 months before re-entering federal service with Anniston Army Depot. In February 2000, he assumed his current position as Chief of Staff .

Married to the former Barbara Turner Zinn of Anniston, they have two sons, Matthew and Austin. Barbara is currently a teacher/librarian at the Alexandria Middle School.

Resume of Service Career of

RAY MINTER

Date and Place of Birth:	24 September 1951, Spring Garden, Alabama
Civil Service:	15 years (civilian and military)
Present Assignment:	Chief of Staff , Anniston Army Depot

Education:

Bachelor of Arts, Jacksonville State University, Jacksonville, Alabama

Bachelor of Science, Jacksonville State University, Jacksonville, Alabama

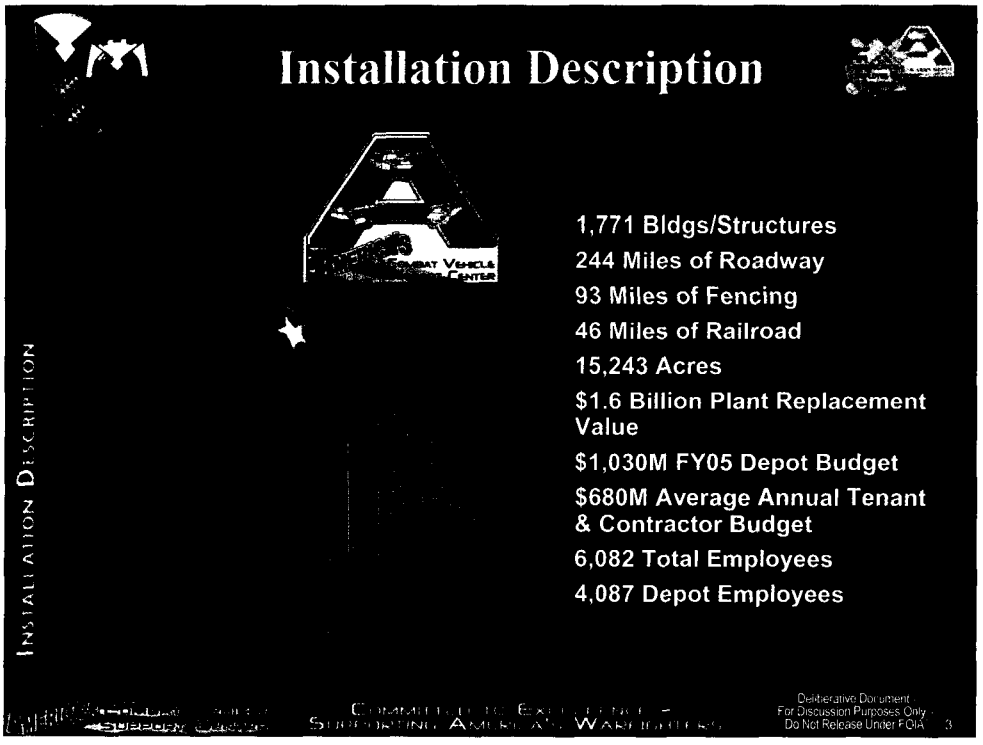
Masters of Science, Jacksonville State University, Jacksonville, Alabama

Masters of Public Administration, Jacksonville State University, Jacksonville, Alabama

Career Assignments of

Ray Minter

From	To	Assignment
1978	1986	Teacher, Calhoun County School System
1987	1989	Deputy Secretary of State, State Capitol, Montgomery, Alabama
1989	1997	Chief of Staff/District Director, United States House of Representatives, Washington, D.C.
1997	1997	Staff, Westinghouse Corporation, Anniston, Alabama
1997	1999	Mission Support, Anniston Army Depot
2000	Present	Chief of Staff



Anniston Army Depot is located in northeast Alabama among the foothills of the Appalachian Mountains. We occupy approximately 25 square miles or 15,000 acres.....as you can see from the statistics listed here we have an infrastructure similar to a small city. With almost 5,600 employees within our fence lines, ANAD is the largest employer within a six-county area and the economic engine of North Central Alabama.

Also within a few hours of the depot lies the Aviation Missile Command in Huntsville (approximately 60 miles away), Maxwell Air Force Base (approximately 100 miles away), and Ft. Rucker (approximately 200 miles away).

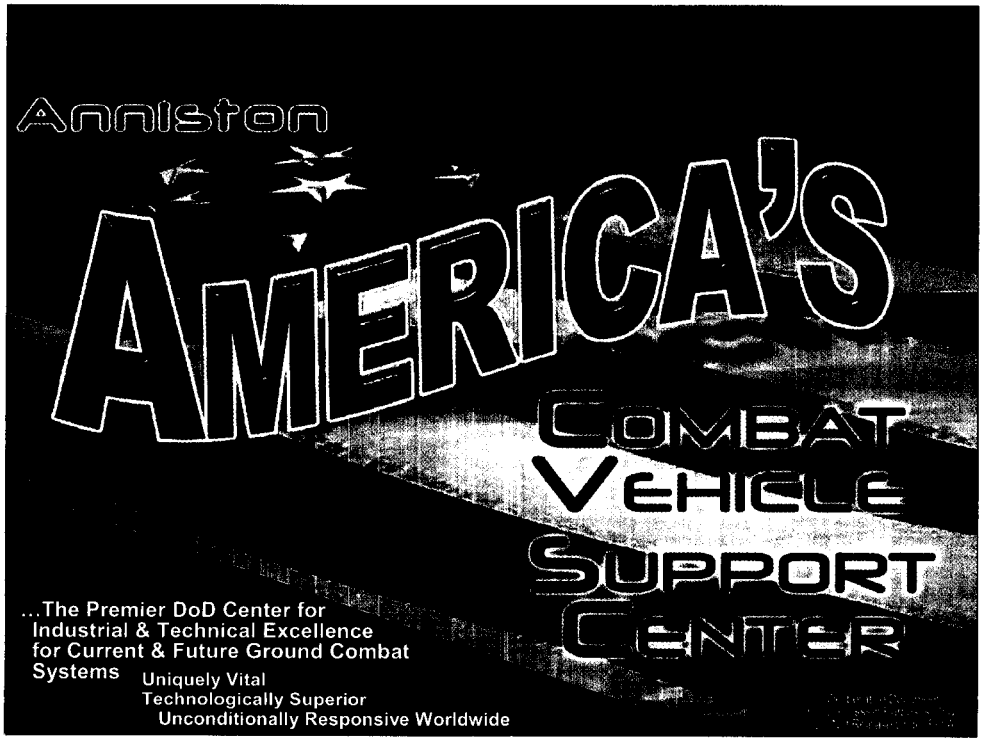
Our mission is to provide:

Industrial & technological support to current and future ground combat systems, artillery, and small arms for our warfighters and allies.

To continue to employ a highly skilled, ready & responsive workforce.

To utilize innovative, state-of-the-art processes & infrastructure while maximizing our use of prototypes, technology insertions & DoD renowned partnering initiatives.

In our journey to reach our Future Focus, we have become known as…



....America's Combat Vehicle Support Center

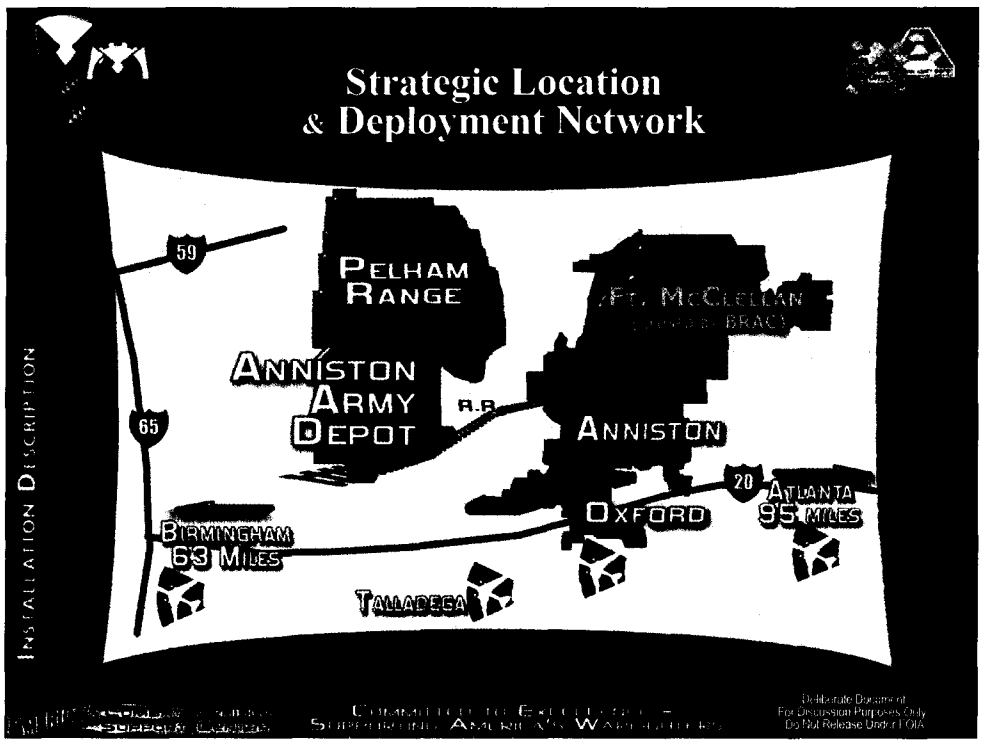
The premier DoD center for industrial & technological excellence capable of the overhaul and refurbishment of all ground combat vehicles, small arms, and artillery.

Uniquely Vital

Technologically Superior

and Unconditionally Responsive Worldwide.

DEPARTMENT OF DEFENSE COMBAT VEHICLES, ARTILLERY SYSTEMS, BRIDGE SYSTEMS AND SMALL ARMS WEAPONS SUPPORTED AT ANNISTON ARMY DEPOT



Anniston Army Depot has a valuable strategic location and deployment network. Located west of the city of Anniston and near former Fort McClellan which was closed in BRAC 95, it shares a common border with Pelham Range, a 20,000-acre range owned and operated by the Alabama Army National Guard. Rail transportation is provided on our southern border by NorFolk Southern Railway with a railhead located on Anniston Army Depot property. Highway transportation is available through various Interstates. I-20 runs between Atlanta and Birmingham, and lies approximately 5 miles to the depot's south. It will soon be connected to the depot by a five-lane Strategic Corridor that is currently under construction. I-65, and I-59 are also located within a short driving distance of the depot. Close available Air transportation includes the Anniston Municipal Airport, located approximately 13 miles away with a 7,000 foot runway and the Talladega airport, which is approximately 8 miles away and has a 6,000 foot runway. The C17, C130 and C7 cargo planes can all land and take off fully loaded at either airport. In addition to our local airports Atlanta and Birmingham International Airports are both within close driving distance of the depot.

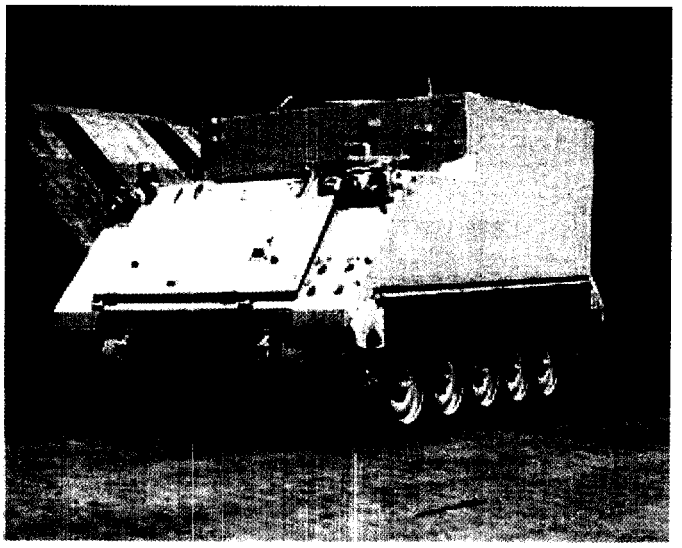
COMBAT VEHICLES

ABRAMS M1A1/M1A2 MAIN BATTLE TANK

The M1 Abrams Main Battle Tank provides mobile firepower for armored formations of sufficient capability to successfully destroy any opposing armored fighting vehicle in the world, while providing protection for its crew in any conceivable combat environment. The M1 is capable of engaging the enemy in any weather, day or night on the multi-dimensional, non-linear battlefield using its firepower, maneuver, and shock effect.

	M1A1	M1A2
MANUFACTURER	General Dynamics Land Systems	
CREW	4: Commander, Gunner, Loader & Driver	
COMBAT WEIGHT	63 tons	69.54 tons
LENGTH (Gun Forward)	32.25 feet	
TURRET HEIGHT	7.8 feet	
WIDTH	12 feet	
GROUND CLEARANCE	19 inches	
FORDING	48 inches	
OBSTACLE CROSSING	42 inches	
GRADIENT	60%	
SIDE SLOPE	40%	
VERTICAL OBSTACLE	42 inches	
TRENCH CROSSING	9 feet	
ENGINE	AGT1500 Turbine Engine, Power: 1500 HP	
TRANSMISSION	X1100-3B Automatic Transmission, 4 Forward and 2 Reverse Gears	
MAXIMUM SPEED	Road: 42 mph; Cross Country: 30 mph	
CRUISING RANGE	275 miles	265 miles
ARMAMENT	Main: 120 mm M256 Smooth Bore Cannon Commander's: .50 Cal M2 Machine Gun Coaxial: 7.62 M240 Machine Gun	
ADDITIONAL	NBC System, Night Vision, Classified Armour, Gun Stabilization	

M113 FAMILY OF VEHICLES

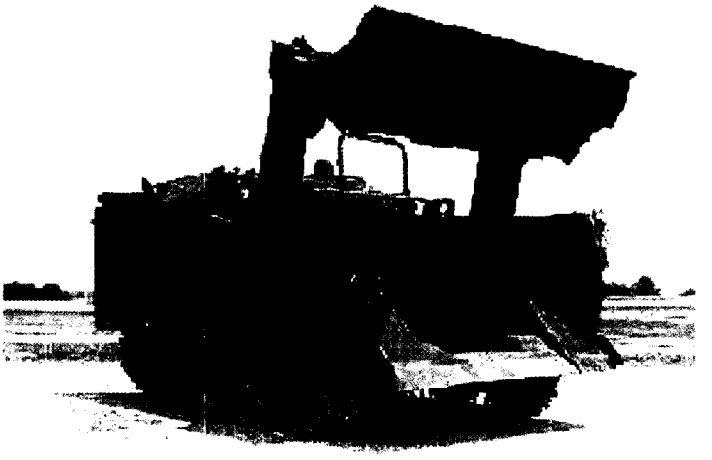


The M113 Family of Vehicles includes 14 variants of light armored tracked vehicles used in a variety of combat and combat support roles. The current fleet includes the M113A3, M113A2, M106A2, M1064, M1064A3, M548A1, M548A3, M577A2, M730A2, M901A1, M981, M1068, M1068A3, M1059, M1059A3, and M58 Smoke.

GENERAL VEHICLE CHARACTERISTICS:

CREW/PERSONNEL CAPACITY	2 + 11
WEIGHT (COMBAT LOADED)	27,180 lbs
WEIGHT (MAXIMUM)	31,000 lbs
WEIGHT (AIR DROP)	22,128 lbs
LENGTH	15.9 feet
HEIGHT	7.2 feet
WIDTH	8.8 feet
GROUND CLEARANCE	16 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	24 inches
TRENCH CROSSING	66 inches
ENGINE	Detroit Diesel 6V53T, 275 HP
TRANSMISSION:	Allison X200-4B Hydrokinetic
SPEED ON LAND	41 mph
SPEED IN WATER, W/TRACK	3.6 mph
CRUISING RANGE	300 miles
ARMAMENT	50 cal Machine Gun; 2,000 ready rounds
ARMOUR:	Basic Hull Aluminum; Bolt On Steel Armor Kit

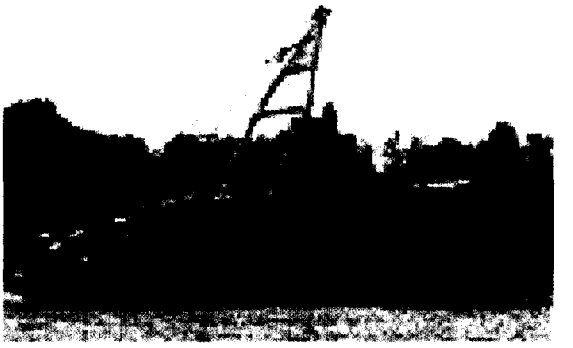
M9 ARMORED COMBAT EARTHMOVER (ACE)



The M9 Armored Combat Earthmover (ACE) is a highly mobile, armored, amphibious combat earthmover capable of supporting front-line forces in both offensive and defensive operations. The M9ACE breaches berms, constructs fighting positions, prepares anti-tank ditches, prepares and maintains combat roads and supply routes, removes roadblocks, and prepares access routes at water obstacles.

CREW	1
WEIGHT	Net: 37,000 lbs Gross: 55,000 lbs
LENGTH	20.5 feet
HEIGHT	8.9 feet
WIDTH	9.2 feet; 10.5 feet with dozer wings
GROUND CLEARANCE	13 inches
GRADIENT	60%
SIDE SLOPE	40%
FORDING DEPTH	36 inches
VERTICAL OBSTACLE	18 inches
TRENCH CROSSING	62 inches
ENGINE	Cummins V903C, 8-cylinder diesel; rated 295 hp @ 2,600 rpm
TRANSMISSION	Clark model 13.5 HP 3610-2, manual shift, 6 forward speeds & 2 reverse speeds
SUSPENSION	Hydro-pneumatic
MAXIMUM SPEED	30 mph
CRUISING RANGE	230 miles
WINCH PULL RATING	35,000 lbs
BOWL CAPACITY	8.7 cubic yards

M88A1 RECOVERY VEHICLE &
M88A2 IMPROVED RECOVERY VEHICLE (HERCULES)



The M88A1 Medium Recover Vehicle and M88A2 Heavy Recovery Vehicle (HERCULES) are full tracked armored vehicles used to perform battlefield rescue and recover missions. The HERCULES is an improved version of the M88A1 to meet the increased demands of towing, winching, and lifting the M1A1 and M1A2 Main Battle Tanks.

	M88A1	M88A2
MANUFACTURER	BMY Combat Systems Division	United Defense & Anniston Army Depot
CREW	4	3
WEIGHT, FULLY LOADED	56 tons	70 tons
LENGTH	29.4 feet	
HEIGHT	10.25 feet	
WIDTH	11.25 feet	
GROUND CLEARANCE	17 inches	
FORDING DEPTH (w/o KIT)	56 inches	
FORDING DEPTH (w/ KIT)	8.5 feet	
GRADIENT	60%	
TRENCH CROSSING	8.6 feet	
POWER PLANT	12-Cylinder diesel, rated 750 hp @ 2,400 rpm	12-cylinder diesel, JP-8 tuned; rated 1,050 hp
SPEED (w/o TOWED LOAD)	27 mph	30 mph
SPEED (w/ TOWED LOAD)	18 mph	
MAXIMUM CRUISING RANGE	300 miles	
BOOM CAPACITY	35 Tons	
VEHICLE HOISTING CAPABILITY	Spade Up: 40,000 lbs Spade Down: 50,000 lbs	Spade Up: 6 tons Spade Down: 35 tons

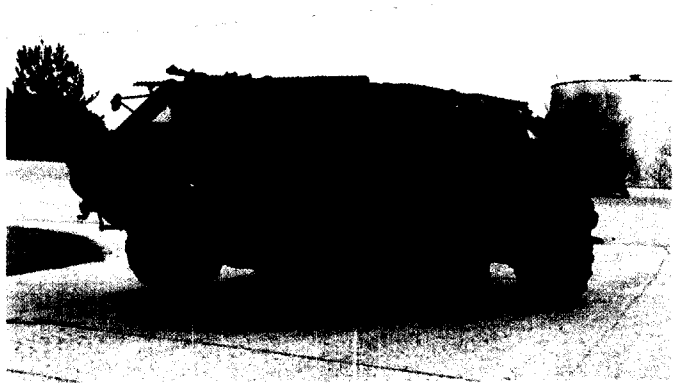
STRYKER FAMILY OF INTERIM ARMORED VEHICLES

The Stryker Interim Armored Vehicle (IAV) is the first new armored vehicle procured by the U.S. Army in 18 years. The Stryker is powered by a 350 hp diesel engine, runs on eight wheels that feature run flat capability and a central tire inflation system, and incorporates a vehicle height management system. The primary design of the Stryker has two variants: the Infantry Carrier Vehicle (ICV) and the Mobile Gun System (MGS). There are eight other configurations of the ICV that have combat service and support roles: Commander's Vehicle, Reconnaissance Vehicle, Fire Support Vehicle, Mortar Carrier, Anti-Tank Guided Missile Vehicle, Engineer Squad Vehicle, Medical Evacuation Vehicle, and Nuclear, Biological and Chemical Reconnaissance Vehicle.

GENERAL VEHICLE CHARACTERISTICS:

MANUFACTURER	General Dynamics Land Systems
CREW	2 + 9
WEIGHT	19 tons
LENGTH	23.9 feet
HEIGHT	7.8 feet
WIDTH	9.7 feet
GROUND CLEARANCE	21 inches
GAP CROSSING	78 inches
GRADIENT	60%
SIDE SLOPE	30%
VERTICAL CLIMB	23 inches
ENGINE	Caterpillar 3126 Diesel Engine; rated 350 hp
TRANSMISSION	Allison model MD 3066, automatic; Speeds: 6 Forward and 1 Reverse
TIRES	Michelin 1200R20 XML
MAXIMUM SPEED	60 mph
CRUISING RANGE	300 miles
ARMAMENT	.50 Cal M2 MG or MK19 Grenade Launcher
AIR TRANSPORTABILITY	1 per C-130; 3 per C-17; 4 per C5
GUN CONTROL	Gun elevation/depression: -20/+60°; Traverse: 360°
NBC SYSTEM	Yes

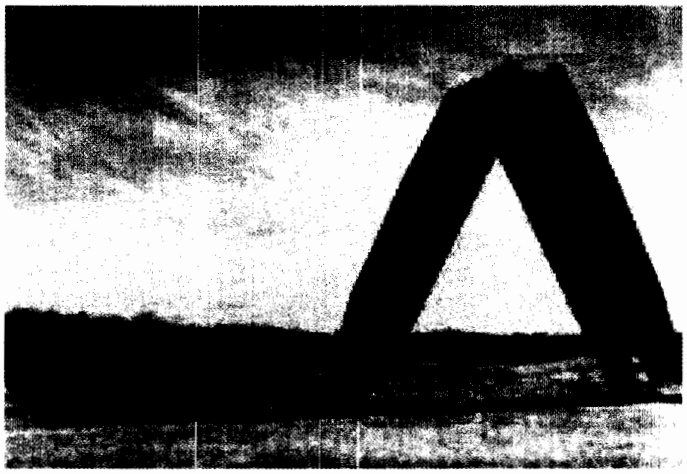
FOX M93A1 NUCLEAR, BIOLOGICAL, & CHEMICAL RECONNAISSANCE SYSTEM (NBCRS)



The M93A1 Fox Vehicle is a rolling laboratory that takes air, water, and ground samples and immediately analyzes them for signs of weapons of mass destruction. The mission of the lightly-armored, wheeled vehicle is to detect, identify, mark, sample, and report chemical and radiological contamination on the battlefield. This mission is accomplished by a sophisticated suite of nuclear and chemical alarms and detectors that are integrated within the vehicle chassis. The Fox improves the survivability and mobility of the Army ground forces by providing increased situational awareness and information superiority to headquarters and combat maneuver elements.

MANUFACTURER	General Dynamics Land Systems
WEIGHT, COMBAT LOADED	18.7 tons
LENGTH	23.9 feet
HEIGHT	7.9 feet (ground to hull top-deck)
WIDTH	9.8 feet
GROUND CLEARANCE	15 inches
FORDING	Amphibious
GRADIENT	60%
VERTICAL OBSTACLE	24 inches
TRENCH CROSSING	42 inches
ENGINE	Daimler-Benz model OM 402A, turbosupercharged, 8-cylinder diesel
TRANSMISSION	Zahnradfabrik Friedrichschafen model 6HP 500, Automatic, 6 Forward Speeds and 1 Reverse Speed
SPEED	Forward (Maximum): 65 mph Reverse (Maximum): 25 mph
CRUISING RANGE	495 miles
ARMAMENT	Main: M240 Machine Gun, 7.62mm Secondary: M16 Rifle, M250 Grenade Launcher

M60A1 ARMORED VEHICLE LAUNCHED BRIDGE (AVLB)



The M60A1 Armored Vehicle Launched Bridge is an armored vehicle used for launching and retrieving a 60-foot scissors type bridge. The AVLB consists of three major sections: the launcher, the hull, and the bridge. The launcher is mounted as an integral part of the chassis. The bridge, when emplaced, is capable of supporting tracked and wheeled vehicles with a military load bearing capacity up to Class 60. The bridge can be retrieved from either end.

VEHICLE SPECIFICATIONS:

MANUFACTURER/CONTRACTOR	General Dynamics Land Systems & Anniston Army Depot
CREW	2
WEIGHT, COMBAT LOADED	56.6 tons
LENGTH	31 feet
WIDTH	12 feet
GROUND CLEARANCE	18 inches
TRENCH CROSSING	8.5 feet
ENGINE	Continental model AVDS-1790-2D diesel engine; rated 750 hp @ 2,400 rpm
TRANSMISSION	General Motors model CD-850-6A; Speeds: 2 Forward and 1 Reverse
SPEED	Maximum: 30 mph (Governed) Cross-Country: 8 to 12 mph
CRUISING RANGE	290 miles

BRIDGE SPECIFICATIONS:

LENGTH	Extended: 63 feet; Folded: 32 feet
SPAN	60 feet
WIDTH	Overall: 13.1 feet Roadway: 12.5 feet
WEIGHT	29,300 lbs

WOLVERINE 70-TON BRIDGE
(FORMERLY HEAVY ASSAULT BRIDGE)

The Wolverine (formerly Heavy Assault Bridge) is an armored vehicle designed to carry, emplace, and retrieve an assault bridge capable of supporting 70-ton loads such as the M1A2 Main Battle Tank. The Wolverine consists of an M1 Abrams tank chassis modified to transport, launch, and retrieve a Military Load Class (MLC) 70 bridge across gaps up to 24 meters wide. The bridge, made of four interchangeable sections, is 26 meters long, 4 meters wide, and weighs 12 tons. The 2-man crew can launch the bridge in five minutes and can retrieve it from the either end in ten minutes. An advantage of the Heavy Assault Bridge is that it is laid horizontally, which makes it difficult to detect and increases survivability.

VEHICLE SPECIFICATIONS:

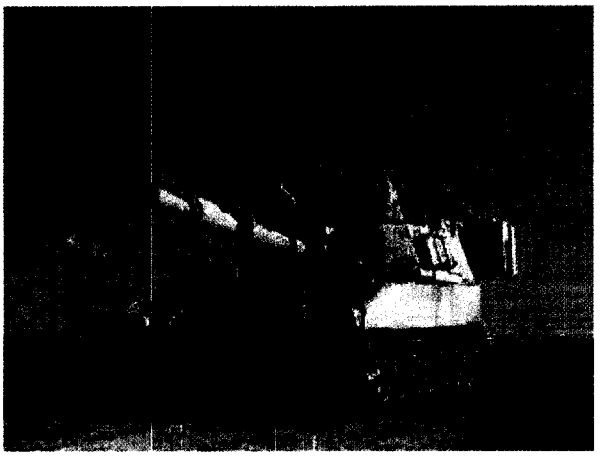
MANUFACTURER	General Dynamics Land Systems
CREW	2
WEIGHT	68.7 tons
GROUND CLEARANCE	19 inches
VERTICAL OBSTACLE	36.7 inches
TRENCH CROSSING	8.8 feet
FORDING	48 inches
POWER PACK	AGT-1500 Turbine Engine w/ X1100 Transmission
SPEED	Maximum: 45 mph (Governed) Cross-Country: 20 mph
CRUISING RANGE	260 miles

HEAVY ASSAULT BRIDGE SPECIFICATIONS:

GAP CROSSING LENGTH	24 meters (26 meter length)
MISSION LOAD CLASS (MLC)	70.0 tons
CROSSING SPEED	8 to 10 mph
DURABILITY	5,000 MLC 70 crossing
LAUNCH TIME	Less than 5 minutes
RETRIEVAL TIME	10 minutes (5 to engage, 5 to store in travel mode)
WEIGHT	24,000 lbs

ARTILLERY SYSTEMS

M109A6 PALADIN SELF-PROPELLED HOWITZER



The M109A6 Paladin is the latest advancement in 155 mm self-propelled artillery and the most technologically advanced cannon in the Army inventory. The system enhances previous versions of the M109 by implementing onboard navigational and automatic fire control systems. The Paladin can receive a fire mission and compute firing data while on the move, select and take up its firing position, automatically unlock and point its cannon, fire and move out – all with no external assistance. The M109A6 is capable of firing up to four rounds per minute to ranges of 30 kilometers (18 miles).

MANUFACTURER	United Defense
CREW	4
COMBAT WEIGHT	63,500 lbs
LENGTH	31.75 feet (overall)
HEIGHT	11.9 feet (overall)
WIDTH	10.3 feet (excluding stowage baskets)
GROUND CLEARANCE	18 inches
FORDING	42 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	21 inches
TRENCH CROSSING	6 feet
ENGINE	Detroit Diesel Model 8V-71T LHR, rated 440 HP @ 2,300 rpm
TRANSMISSION	Allison XTG411-4A Cross Drive, manual shift; Speeds: 4 Forward and 2 Reverse
MAXIMUM SPEED	40 mph
CRUISING RANGE	215 miles
ARMAMENT	Main: 155 mm M284 Howitzer Anti-Aircraft: 12.7mm M2 Machine Gun
GUN CONTROL	Automatic Fire Control System; +75/-3° Gun Elevation/Depression (hydraulic control); Hydraulic/manual turret power control, traverse: 360°

M992 FIELD ARTILLERY AMMUNITION SUPPLY VEHICLE (FAASV)

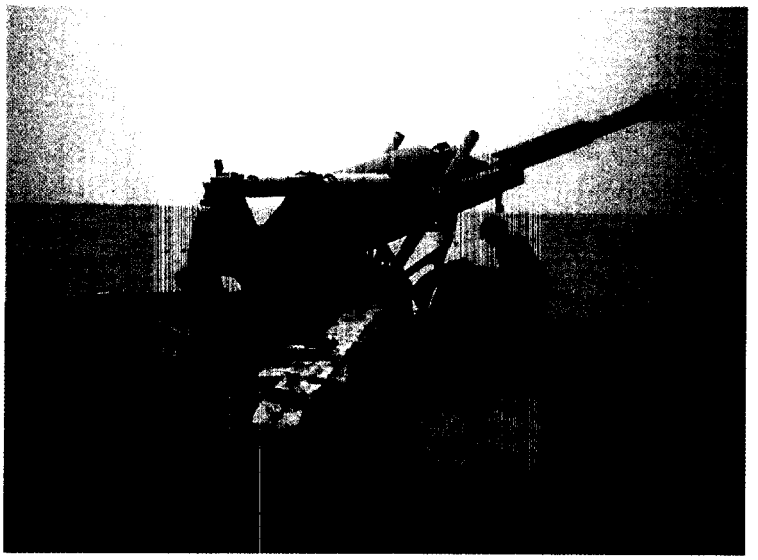
M992A2 FAASV

FAASV and Paladin In the Field

The role of the M992A2 Field Artillery Ammunition Support Vehicle (FAASV) is to supply ammunition to M109 series self-propelled howitzers in the field. The FAASV is a field artillery weapon in terms of speed, mobility, and survivability. The FAASV is basically the chassis of a standard M109 155 mm self-propelled howitzer with the cab replaced by a fully enclosed superstructure designed to hold 93 each 155 mm projectiles, 99 each propellant charges, and 104 each fuzes. In use, the FAASV backs up to the user M109 and a conveyor in the FAASV unfolds and delivers the 155 mm ammunition at the rate of up to 8 rounds per minute to the M109.

MANUFACTURER	United Defense
CREW	2 + 6
WEIGHT	57,500 lbs (combat loaded)
LENGTH	21.7 feet
HEIGHT	11.9 feet (to top of GPS antenna)
WIDTH	10.3 feet
GROUND CLEARANCE	18 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	21 inches
TRENCH CROSSING	72 inches
FORDING	42 inches
ENGINE	Detroit Diesel Model 8V-71T LHR; rated 440 HP @ 2,300 rpm
TRANSMISSION	Allison XTG411-4A Cross Drive w/ 4 Forward and 2 Reverse Gears
MAXIMUM SPEED	35 mph
CRUISING RANGE	220 miles
AMMUNITION CARRYING CAPACITY	93 each 155 mm projectiles, 99 each propellant charges, and 104 fuzes.
ARMAMENT	0.50-cal M2 machine gun
OTHER	Automatic Fire Extinguisher System (AFES)

M198 155MM MEDIUM TOWED HOWITZER



The M198 Medium Towed Howitzer is a 155 mm field artillery howitzer. It is constructed of aluminum and steel, and is air transportable by CH-47 helicopter and C-130 or larger fixed-wing aircraft. The M198 provides increased range, and improved reliability and maintainability over the former standard towed 155mm howitzer, the M114A2. The use of rocket-assisted projectiles significantly extends the range, lethality, and counter-battery fires of the direct support artillery battalions. The M198 fires all current and developmental 155 mm ammunition.

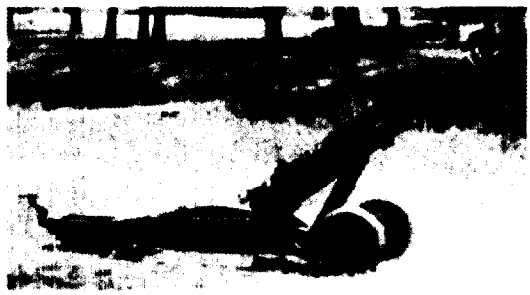
CREW	9
WEIGHT	15,758 lbs
LENGTH (Tow Position)	40.5 feet
LENGTH (Firing Position)	36.2 feet
HEIGHT (Tow Position)	9.5 feet
WIDTH (Tow Position)	9.2 feet
GROUND CLEARANCE	13 inches
TIRES	16.5 x 19.5
TOWING SPEEDS	Improved Roads: 45 mph Secondary Roads: 25 to 30 mph Cross Country: 5 mph
TOWING VEHICLE	M939 5 Ton (6 x 6) Truck
ARMAMENT	155 mm M199 Cannon
BARREL LENGTH	20 feet
MAXIMUM EFFECTIVE RANGE	Conventional Ammunition: 22,400 meters (13.92 miles) Rocket-Assisted Projectile: 30,000 meters (18.64 miles)
ELEVATION RANGE	+72/-5°
TRAVERSE	45° (total)
RATE OF FIRE	Maximum: 4 rounds per minute Sustained: 2 rounds per minute
RECOIL SYSTEM	Hydro-Pneumatic
FIRE CONTROL	Indirect (4X) and Direct (8X) Sighting Telescopes

M119A1 105MM LIGHT TOWED HOWITZER

The M119A1 is a lightweight Towed Howitzer, air-droppable by parachute. It provides direct and indirect fire support to highly mobile light infantry divisions and separate brigades. The M119A1 has greater range, is lighter, and has a more rapid rate of fire than its predecessor, the M102. It also provides a low silhouette and requires no recoil pit. The M119A1 can be quickly moved and employed to provide maximum firepower with a minimum of combat loaded weight. The M119A1 is air transportable with its basic load of ammunition by UH-60 Black Hawk helicopter and is dual lift capable with the CH-47 Chinook. The designated prime mover for the M119A1 is the M1097 HMMWV.

WEIGHT	With Complete Basic Issue Items (BII): 4,520 lbs w/o BII: 4,100 lbs
LENGTH	Folded Position: 16 feet Firing Position: 20.75 feet
HEIGHT	Folded Position: 4.5 feet Cannon Locked in Tube Clamp: 7.25 feet
WIDTH	5.8 feet
TIRE SIZE	9 x 16
GROUND CLEARANCE	19 inches
TOWING VEHICLE	M1097 (4 x 4) Heavy HMMWV
ARMAMENT	105 mm Cannon
MAXIMUM EFFECTIVE RANGE	Conventional Ammunition: 14,000 meters (8.75 miles) Rocket-Assisted Projectile: 19,000 meters (11.88 miles)
ELEVATION RANGE	+70/-5.5°
TRAVERSE	11° (total) 360° (on turntable)
RATE OF FIRE	Maximum: 6 rounds per minute for 2 min. Sustained: 3 rounds per minute for 30 min.
RECOIL SYSTEM	Hydro-Pneumatic
FIRE CONTROL	Indirect (4X) and Direct (3X) Sighting Telescopes

M102 105MM LIGHT TOWED HOWITZER



The M102 Towed Howitzer is a 105 mm, lightweight towed artillery weapon. The M102 consists of the M137 cannon, M37 recoil mechanism, M31 carriage, and fire-control system. The M102 has a range of up to 11,500 meters using conventional ammunition. The M102 is air transportable by UH-60 Black Hawk helicopters, or can be dropped by parachute with airborne units. The M102 has been replaced by the M119A1 towed howitzer, but the U.S. Army retains quantities of M102's for Army National Guard and Foreign Military Sales customers.

CREW	8
WEIGHT	3,291 lbs
LENGTH (TRAVELING)	17 feet
HEIGHT (TRAVELING)	5.25 feet
WIDTH (TRAVELING)	6.5 feet
TIRE SIZE	7 x 16
GROUND CLEARANCE	13 inches
TOWING VEHICLE	6 x 6 Truck
ARMAMENT	105 mm M137 Cannon
MAXIMUM EFFECTIVE RANGE	Conventional Ammunition: 11,500 meters (7.19 miles) Rocket-Assisted Projectile: 15,100 meters (9.44 miles)
ELEVATION RANGE	+75/-5°
TRAVERSE	360°
RATE OF FIRE	10 rounds per minute
RECOIL SYSTEM	Hydro-Pneumatic
FIRE CONTROL	Indirect (4X power) and Direct Sighting Telescopes

BRIDGE SYSTEMS

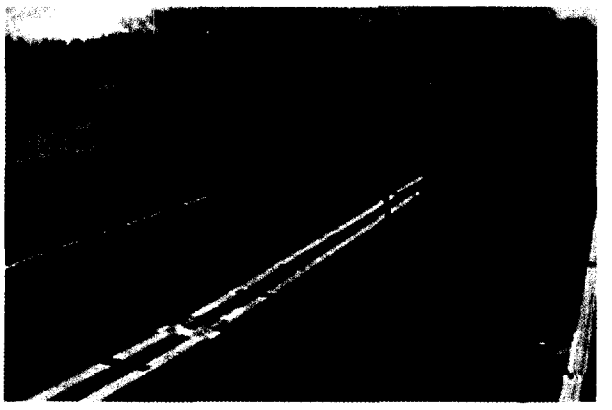
MEDIUM GIRDER BRIDGE (MGB)

The Medium Girder Bridge (MGB) is a two-girder deck bridge which forms a roadway 13 feet 2 inches wide. The girders can be constructed in two forms: a shallow single story or a deeper double story. The double story can be reinforced by adding components of the Link Reinforcement Set (LRS), which permits longer Military Load Class (MLC) 70 bridges to be constructed.

BRIDGE LENGTH vs. MAXIMUM LOAD CAPABILITY

BRIDGE	MILITARY LOAD CLASS (MLC)	BRIDGE LENGTH (feet)	MAX. TRANSVERSE SLOPE ULOADED	MAX. FULL LOAD CROSSINGS
SINGLE STORY	60	32	1/10	10,000
	70 (Tracked)	32	1/20	5,000
	100 (Wheeled)	32	0	7,500
DOUBLE STORY	60	102	1/20	10,000
	60 (T)	108	1/20	7,500
	70 (T)	102	1/20	5,000
	100 (W)	90	0	3,000
LINK REINFORCED	60	162	1/20	10,000
	70 (T)	150	1/20	10,000
	70 (T)	162	0	5,000
	100 (W)	100	0	--

RIBBON BRIDGE



The Ribbon Bridge is a floating, modular bridge with integral superstructure and floating supports. A complete ribbon bridge consists of a ramp bay at each bank and the required number of interior bays to complete the bridge between the ramp bays. The bridge has a roadway width of 13 feet 5 inches. In addition, there are two 4-foot wide walkways on the bow pontoons. The normal crossing capability of is a class 70 load in currents up to 8 feet per second. Individual bays may be joined to form a raft for ferrying operations. Each bay is transported in a folded condition on a ribbon bridge transporter. The transporter is a modified U.S. Army M812 truck chassis or a modified U.S. Army M945 truck chassis, which provides a self-contained unit for transporting, launching, and retrieving the bays and the boats.

RIBBON BRIDGE DATA

INTERIOR BAY:

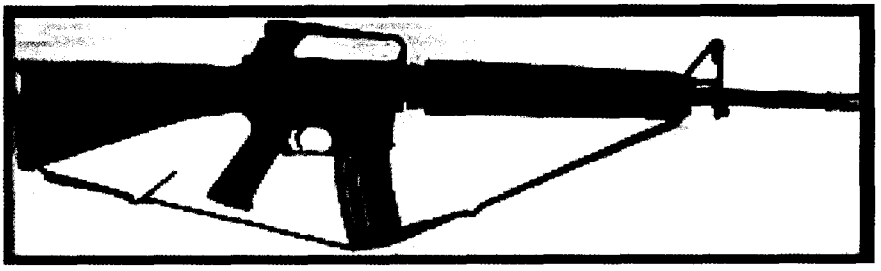
LENGTH	272.5 inches
WIDTH	Folded: 126.6 inches Unfolded: 320 inches
HEIGHT	Folded: 91 inches Unfolded: 44 inches
WEIGHT	12,000 lbs
CUBAGE	1,817 ft^3
CENTER OF GRAVITY	136.25 inches (inboard of connecting lock pin)

RAMP BAY:

LENGTH	228.7 inches (304 inches with approach ramps extended)
WIDTH	Folded: 128 inches Unfolded: 320 inches
HEIGHT	Folded: 94.1 inches Unfolded: 43 inches
WEIGHT	11,700 lbs
CUBAGE	1,566 ft^3
CENTER OF GRAVITY	96 inches (inboard of connecting lock pin)

SMALL ARMS WEAPONS

M16A2 RIFLE



The M16A2 is a lightweight, air-cooled, gas-operated, magazine-fed, shoulder or hip-fired weapon designed for either automatic fire (3 round bursts) or semiautomatic fire (single shot). The M16A2 is capable of firing all NATO standard 5.56 mm ammunition and can fire 40 mm grenades when equipped with the M203 Grenade Launcher. The system incorporates an adjustable rear sight which corrects for both wind and elevation, a heavier barrel with 1-in-7 rifling, and a muzzle compensator to prevent muzzle climb during semiautomatic operation.

MANUFACTURER	Colt Manufacturing
PRIMARY FUNCTION	Infantry Weapon
LENGTH	39.36 inches
WEIGHT	8.79 lbs (with 30 round magazine)
BORE DIAMETER	5.56 mm
MAXIMUM RANGE	3,600 meters
AREA TARGET	800 meters
POINT TARGET	550 meters
MUZZLE VELOCITY	2,800 feet (853 meters) per second
RATE OF FIRE	Cyclic: 800 rounds per minute Sustained: 12 to 15 rounds per minute Semi-automatic: 45 rounds per minute Burst: 90 rounds per minute
MAGAZINE CAPACITY	30 rounds

M203 40 MM GRENADE LAUNCHER

The M203 40 mm Grenade Launcher is used while attached to an M16A2 rifle. It is a lightweight, compact, breech loading, pump action, single shot launcher. The launcher is capable of firing a variety of low velocity 40 mm ammunition.

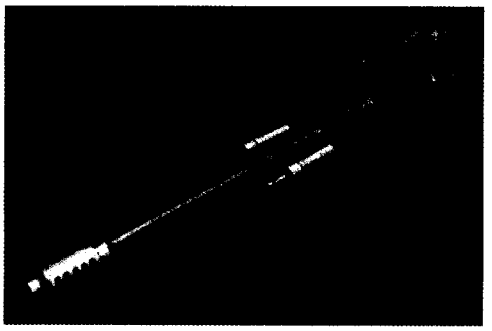
WEIGHT	Launcher: 3 lbs Rifle: 6.5 lbs Total: 9.5 lbs
BORE DIAMETER	40 mm
MAXIMUM RANGE	400 meters
MAXIMUM EFFECTIVE RANGE	Area Target: 350 meters Point Target: 150 meters
MINIMUM SAFE RANGE	Training: 130 meters Combat: 31 meters

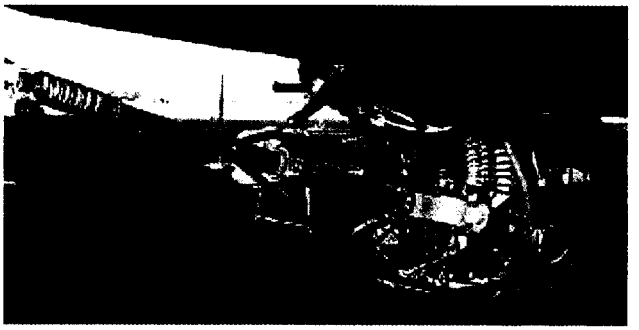
M2 .50 CALIBER (12.7 mm) MACHINE GUN

The M2 .50 caliber is a World War II era automatic, belt-fed, recoil operated, air-cooled, crew-operated machine gun. The M2 is crew transportable with limited amounts of ammunition over short distances. The gun is capable of single shot as well as automatic fire. This weapon can be used effectively against personnel; light armored vehicles; low, slow flying aircraft; and small boats.

MANUFACTURER	Saco Defense
PRIMARY FUNCTION	Transportable, crew operated machine gun
LENGTH	61.42 inches
WEIGHT	Gun: 84 lbs Tripod: 44 lbs Total: 128 lbs
BORE DIAMETER	0.50 inches (12.7 mm)
MAXIMUM RANGE	4.22 miles
MAXIMUM EFFECTIVE RANGE	1,830 meters
RATE OF FIRE	550 rounds per minute

M230 30 MM AUTOMATIC GUN

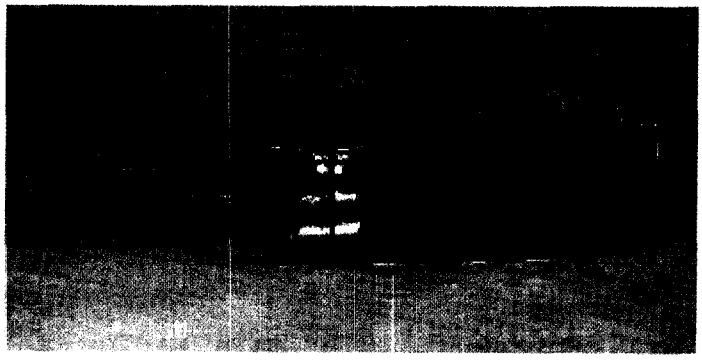


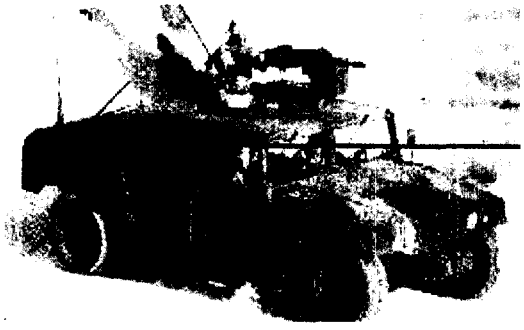


The M230 30 mm Automatic Gun (Chain Gun) is a component of the Area Weapon System on the AH-64A Apache Helicopter. The M230 is a single barrel, externally powered, electrically fired, chain driven weapon. It is mounted in the lower section of the gun turret on the underside of the Apache Helicopter. It fires 30 mm link-less ammunition at a rate of 625 ± 25 rounds per minute.

LENGTH	66 inches
WEIGHT	127 lbs
BORE DIAMETER	30 mm
MAXIMUM RANGE	3,000 meters
EXTERNAL POWER	AC Motor, 3 Phase, 400 Hertz
RATE OF FIRE	600 to 650 rounds per minute
BURST LIMIT	550 rounds

MK19 40 MM MACHINE GUN

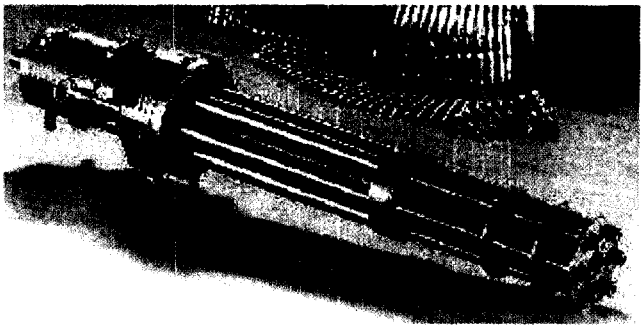


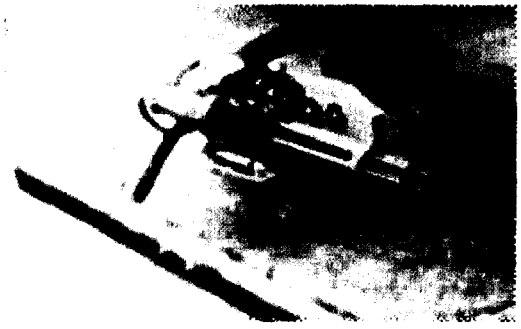


The MK19 40 mm Machine Gun is an air-cooled, disintegrating metallic link-belt fed, blowback operated, fully automatic weapon and is crew transportable over short distances with limited amounts of ammunition. It can fire a variety of 40 mm grenades, including high explosive rounds designed to pierce armor up to 2 inches thick and produce fragments to kill personnel within 5 meters and wound personnel within 15 meters of the point of impact. Associated components of the MK19 are the MK64 Cradle Mount, M3 Tripod Mount, and the AN/TVS-5 Night Vision Sight. The MK19 also mounts in the up-gunned weapons station of the Amphibious Assault Vehicle (AAV).

MANUFACTURER	Saco Defense Industries
LENGTH	43.1 inches
WEIGHT	Gun: 72.5 lbs Cradle: 21.0 lbs Tripod: 44.0 lbs Total: 137.5 lbs
BORE DIAMETER	40 mm
MAXIMUM RANGE	2,200 meters
MAXIMUM EFFECTIVE RANGE	1,600 meters
MUZZLE VELOCITY	790 feet per second
RATE OF FIRE	Cyclic: 325 to 375 lbs rounds per minute Rapid: 60 rounds per minute Sustained: 40 rounds per minute

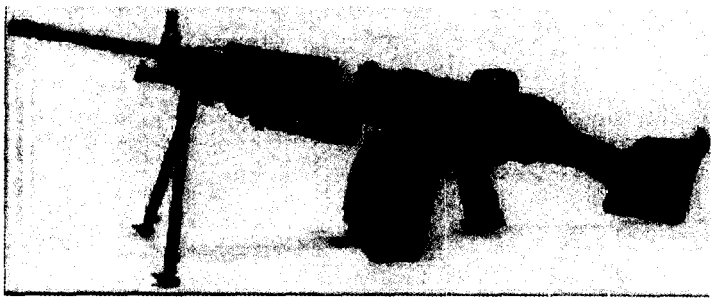
7.62 MM MINIGUN
M134 GATLING MACHINE GUN (ARMY)
GAU-2B/A (AIR FORCE)
GAU-17/A (NAVY)





The 7.62 mm minigun was designed to provide a lightweight high rate of fire armament package for use on helicopters and light fixed wing aircraft. The minigun is a crew served, electrically driven, 6-barrel, rotary action, percussion-fired weapon, with a maximum rate of fire of 6,000 rounds per minute. Components of the minigun are the rotor assembly, six bolt assemblies, six removable bolt tracks, gun housing assembly, rear run support, six barrels, barrel clamp assembly, safing sector, housing cover, and two quick-release pins. The minigun is used on a number of different Army, Air Force, and Navy aircraft.

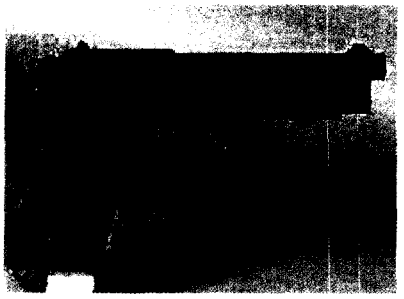
M249 SQUAD AUTOMATIC WEAPON (SAW)



The Squad Automatic Weapon (SAW) is an air-cooled, belt-fed, gas-operated automatic weapon that fires from the open-bolt position. It has a regulator for selecting either normal (750 rounds per minute) or maximum (1,000 rounds per minute) rate of fire. Although the M249 is primarily used as an automatic rifle, it is also used as a light machine gun. It can be fired from the shoulder, hip, or underarm position; or from the bipod-steadied position. In defense, the M249 adds the firepower of 10 to 20 riflemen without the addition of manpower.

MANUFACTURER	Fabrique Nationale Manufacturing, Inc.
PRIMARY FUNCTION	Hand-held combat machine gun
LENGTH	40.87 inches
WEIGHT	15.16 lbs (with tripod and tools)
BORE DIAMETER	5.56 mm
MAXIMUM RANGE	2.23 miles
MAXIMUM EFFECTIVE RANGE	3,281 feet (1,000 meters) for an area target
RATE OF FIRE	Cyclic: 725 rounds per minute Sustained: 85 rounds per minute
MAGAZINE CAPACITY	30 rounds; 200 round box magazine

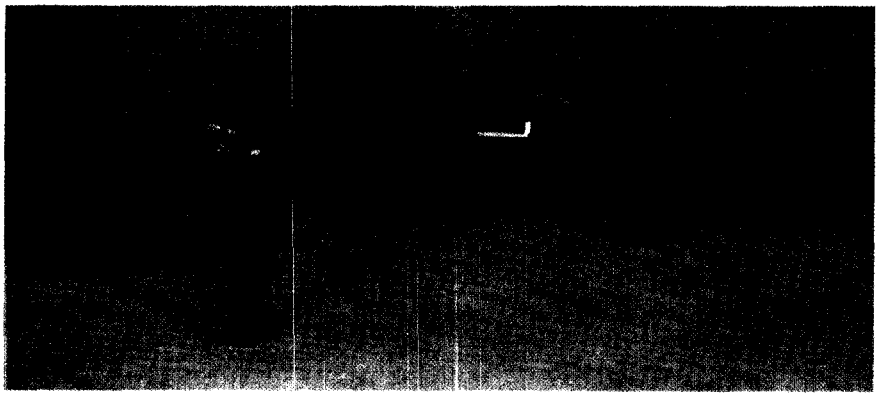
M9 9 MM PISTOL



The M9 Beretta pistol is the standard Army firearm. It is basically a Beretta 92F pistol and fires the 9 mm NATO round. A semiautomatic, double-action pistol, the M9 is more lethal, lighter, and safer than its predecessors. The M9 is carried by crew-served weapon crewmen and by others who have a personal defense requirement.

MANUFACTURER	Berretta
PRIMARY FUNCTION	Semi-automatic pistol
LENGTH	8.54 inches
WIDTH	1.50 inches
HEIGHT	5.51 inches
BARREL LENGTH	4.92 inches
WEIGHT	2.55 lbs (fully loaded)
BORE DIAMETER	9 mm (approximately .355 inches)
MAXIMUM EFFECTIVE RANGE	152.5 feet (50 meters)
MUZZLE VELOCITY	1,200 feet (365 meters) per second
MAGAZINE CAPACITY	15 rounds

M240 7.62 MM MEDIUM MACHINE GUN



The M240 Machine Gun is a left hand feed, gas-operated, air-cooled, fixed head space weapon. The M240 has two possible configurations: aircraft and ground. In the aircraft configuration the M240 has a front and rear sight and a trigger group that accommodates the spade grip device. The ground configuration involves the installation of an Egress Package, which is designed to provide downed aircrew personnel with increased firepower. The M240 is the standard U.S. Marine Corps medium machine gun.

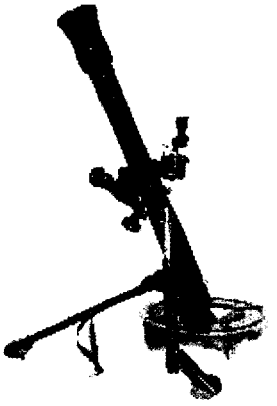
MANUFACTURER	Fabrique Nationale Manufacturing, Inc.
LENGTH	47.5 inches
WEIGHT	24.2 lbs
BORE DIAMETER	7.62 mm
MAXIMUM RANGE	2.31 miles
MAXIMUM EFFECTIVE RANGE	1.1 miles
RATE OF FIRE	Cyclic: 650 to 950 rounds per minute Rapid: 200 rounds per minute Sustained: 100 rounds per minute

M120 120 MM MORTAR SYSTEM

The M120 120 mm Mortar System consists of the M298 Cannon Assembly, M190 Bipod Assembly, M9 Baseplate, and M1100 Trailer. The M120 is transported on the M1100 Trailer by the M998 HMMWV. The M120, like all other U.S. mortars, fires fin-stabilized ammunition from a smooth bore. Although heavy mortars require trucks or tracked mortar carriers to move them, they are still much lighter than field artillery pieces. They outrange light and medium mortars, and their explosive power is much greater.

CREW	5
WEIGHT	Mortar System: 317 lbs (in firing position) Mortar Barrel: 110 lbs Bipod: 70 lbs Baseplate: 136 lbs
LENGTH	Mortar Barrel: 69 inches Bipod: 51 inches Trailer: 79 inches
SIGHTING EQUIPMENT	M67 Sight Unit
BORE DIAMETER	120 mm
ELEVATION	Minimum: 710 mils Maximum: 1510 mils
TRAVERSE	136 mils (max. right or left)
ARC OF FIRE	6400 mils
MAXIMUM RANGE	7,200 meters
MINIMUM RANGE	200 meters
RATE OF FIRE	Maximum: 16 rounds per minute (1st minute) Sustained: 4 rounds per minute
PRIME MOVER	HMMWV

M252 81 mm MEDIUM EXTENDED RANGE MORTAR



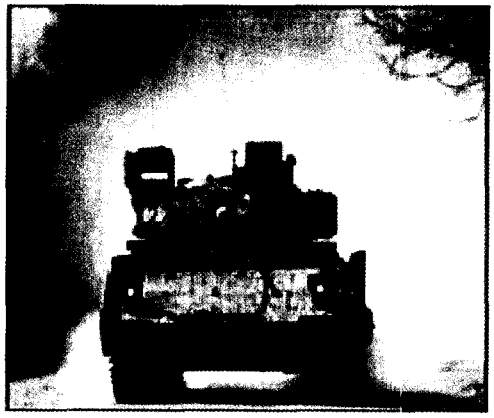
The M252 81 mm Mortar System is a crew served, medium weight mortar which is highly accurate and provides for a greater range (4,500 meters to 5,650 meters) and lethality than its predecessor, the M29A1 mortar. The M252 is ideally suited to support airborne, air assault, mountain, and light infantry units. The M252 Mortar System consists of the M253 Cannon Assembly, M177 Bipod Assembly, and M3A1 Baseplate.

LENGTH	56 inches
WEIGHT	Mortar Assembly: 35 lbs Bipod: 26 lbs Baseplate: 25.5 lbs Sight Unit: 2.5 lbs Total: 89 lbs
BORE DIAMETER	81 mm
MAXIMUM EFFECTIVE RANGE	5,700 meters
MINIMUM RANGE	80 meters
RATE OF FIRE	Maximum: 33 rounds per minute Sustained: 16 rounds per minute
ELEVATION	45 to 85 degrees
SIGHTING EQUIPMENT	M64 Mortar Sight

DEPARTMENT OF DEFENSE COMBAT & TACTICAL VEHICLES AND SMALL ARMS WEAPONS SUPPORTED AT OTHER DOD INSTALLATIONS

COMBAT & TACTICAL VEHICLES

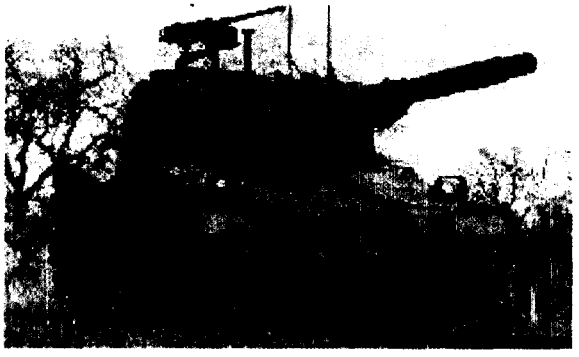
M2A3 & M3A3 BRADLEY FIGHTING VEHICLE SYSTEMS



The Bradley Fighting Vehicle is a fully armored, fully tracked vehicle designed to carry Mechanized Infantry into close contact with the enemy. The mission of the Bradley is to provide mobile protected transport of an infantry squad to critical points on the battlefield and to perform cavalry scout missions. The Bradley possesses sufficient cross-country mobility to keep up with the M1 Abrams Main Battle Tank, medium and long-range firepower capable of defeating any vehicle on the battlefield, and is adequately armored to protect its crew from artillery and small arms threats.

MANUFACTURER	United Defense
CREW	3 + 7
COMBAT WEIGHT	63,800 lbs
LENGTH	21.5 feet
HEIGHT	8.4 feet
WIDTH	10.8 feet
GROUND CLEARANCE	18 inches
GROUND PRESSURE	11.6 PSI
FORDING	Amphibious (with preparation)
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	36 inches
TRENCH	100 inches
ENGINE	Cummins VTA-903T turbocharged 8-cylinder diesel; rated 600 HP @ 2,600 RPM
TRANSMISSION	HMPT-500-3EC TEC hydro-mechanical
ROAD SPEED	38 mph
CRUISING RANGE	300 miles
ARMAMENT	Main: 25mm M242 Cannon (Chain Gun) Co-axial: 7.62mm M240C MG ATGW: 2-tube TOW Launcher
NBC SYSTEM	Yes
NIGHT VISION EQUIPMENT	Yes
GUN CONTROL	Electric/Manual Turret Control; Gun elevation/depression: +60/-10°; TOW Launcher elevation/depression: +30/-20°

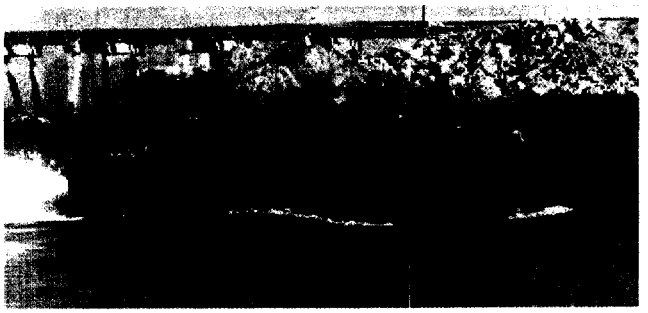
M8 ARMORED GUN SYSTEM (AGS)

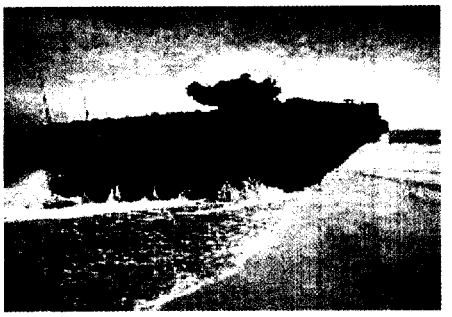


The M8 Armored Gun System (AGS) is a highly deployable, lightweight vehicle, with high firepower and reconfigurable armor protection. The AGS was designed to combine a tank's firepower with a highly mobile, air-droppable vehicle. The AGS resembles a conventional tank, but only requires a crew of three through the use of an autoloader. The autoloader holds 21 projectiles with nine more stowed forward near the driver. The main armament is a 105 mm Rheinmetall XM35 tank gun. Fire control is provided by a digital fire control system with microprocessors and a databus similar to that on the M1A2 tank. The AGS can be fitted with three levels of armor protection, the highest of which can protect against cannons up to 30 mm.

MANUFACTURER	FMC (now part of United Defense)
CREW	3
WEIGHT	Level 1 Armor: 19.25 tons Level 2 Armor: 22.25 tons Level 3 Armor: 24.75 tons
LENGTH	Hull: 17.5 feet Overall: 27.5 feet
HEIGHT	8.3 feet
WIDTH	8.8 feet
GROUND CLEARANCE	16 inches
FORDING	40 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	32 inches
TRENCH CROSSING	81 inches
ENGINE	Detroit Diesel model 6V-92TIA; developing 550 hp @ 2,400 rpm, 580 hp on DF2 diesel fuel
TRANSMISSION	General Electric model HMPT-500-3EC
SPEED	Maximum, Road: 45 mph Cross Country: 30 mph
CRUISING RANGE	300 miles
ARMAMENT	Main: 105 mm M35 Soft Recoil Rifled Gun Coaxial: 7.62 mm M240 Machine Gun Commander: .50 cal M2 MG or MK19 40mm
GUN CONTROL	Hydraulic/Manual Control; Gun Stabilizer; Gun elevation/depression: +20/-10°; Traverse: 360°

AMPHIBIOUS ASSAULT VEHICLE (AAV7A1)





The Amphibious Assault Vehicle (AAV) is an armored assault amphibious full-tracked landing vehicle. The primary responsibility of the AAV during an amphibious operation is to spearhead a beach assault. The AAV carries troops in water operations from ship to shore, through rough water and surf zone. It also carries troops to inland objectives after landing ashore. The AAV will eventually be replaced by the new AAAV, but the AAV is expected to remain in service for several more years.

CREW	3 + 25
WEIGHT	Combat Weight: 50,758 lbs Unloaded Weight: 46,314 lbs
LENGTH	26.8 feet
HEIGHT	10.8 feet
WIDTH	10.7 feet
GROUND CLEARANCE	16 inches
FORDING	Amphibious
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	36 inches
TRENCH CROSSING	8 feet
ENGINE	Cummins model VT-400 [Detroit Diesel model 8V-53T], 8-cylinder, water-cooled, turbocharged diesel developing 400 HP @ 2,800 rpm
POWER TO WEIGHT RATIO	17.51 HP/Ton
TRANSMISSION	HS-400 with hydraulic torque converter, 4 forward and 2 reverse ratios
MAXIMUM SPEED	Road, forwards: 45 mph Water, water-jets: 8.4 mph Water, tracks: 4.5 mph
CRUISING RANGE	Land @ 25 mph: 300 miles Water@ 2,600 rpm: 7 hours
ARMAMENT	12.7 mm M85 Machine Gun, MK19 40 mm Grenade Launcher
NBC SYSTEM	No
GUN CONTROL	Electro-hydraulic/manual turret control; Gun elevation/depression: +60/-15°; Traverse: 360°
NIGHT VISION EQUIPMENT	Yes

MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)

The Multiple Launch Rocket System (MLRS) provides the Army an all weather, indirect, area fire weapon system to strike counter-fire, air defense, armored formations, and other high-payoff targets at all depths of the tactical battlefield. Primary missions of the MLRS include the suppression, neutralization, and destruction of threat fire support and forward area air defense targets. The system carries 12 rockets, each capable of being fired individually or simultaneously to cover a range beyond 30 kilometers (19 miles).

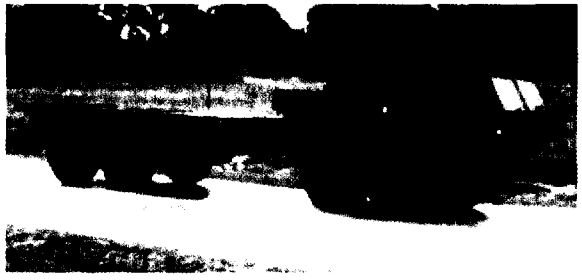
CREW	3
WEIGHT	System, Loaded: 55,400 lbs System, Empty: 44,400 lbs Carrier Only: 32,600 lbs
LENGTH	22.9 feet (traveling)
HEIGHT	8.6 feet (traveling) 19.4 feet (elevated)
WIDTH	9.7 feet (traveling)
GROUND CLEARANCE	17 inches
FORDING	42 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	39 inches
TRENCH	7.5 feet
ENGINE	Cummins VTA-903T turbocharged 8-cylinder diesel; rated 600 HP @ 2,600 RPM
TRANSMISSION	HMPT-500-3EC TEC hydro-mechanical
MAXIMUM SPEED	40 mph
CRUISING RANGE	300 miles

FAMILY OF LIGHT ARMORED VEHICLES (LAV)

The Family of Light Armored Vehicles (LAV FOV) are 8 x 8 wheeled light armored combat, combat support, and combat service support vehicles. There are ten variants in this family of vehicles: LAV-25, Anti-tank, Personnel Carrier, Recovery, Command and Control, Ambulance, Engineer, LAV-Assault Gun, 120mm Mortar System, and Ammunition Carrier.

CREW	3 + 6
WEIGHT	Curb Weight: 22,960 lbs Combat Weight: 28,200 lbs
LENGTH	21.2 feet
HEIGHT	9 feet
WIDTH	8.2 feet
FORDING	Capable of fording streams, rivers, and inland waterways with minimal preparation
GRADIENT	60%
SIDE SLOPE	30%
VERTICAL OBSTACLE	20 inches
TRENCH CROSSING	6.75 feet
ENGINE	Detroit Diesel 6V53T, 6 cylinder diesel; rated 275 HP @ 2,800 rpm
TRANSMISSION	Allison model MT653 automatic, 5 forward and 1 reverse gear
MAXIMUM SPEED	Land: 62 mph Water: 6 mph
CRUISING RANGE	Land: 410 miles
ARMAMENT	Main: M242 25 mm Chain Gun Coaxial: 7.62 mm M240 Machine Gun
NBC SYSTEM	Yes
GUN CONTROL	Gun Stabilizer; Turret control: hydraulic/manual; Gun elevation/depression: +60/-10°; Turret traverse: 360°
NIGHT VISION EQUIPMENT	Yes

MK48 LOGISTICS VEHICLE SYSTEM (LVS)



The MK48 Logistics Vehicle System (LVS) is a modular system consisting of a MK48 front-end power unit and five interchangeable rear body units (MK14 Container Transporter, MK15 Recovery/Wrecker, MK16 5th Wheel Semi-trailer Adapter, MK17 Dropside Cargo, and MK18 Self-loading Container and Ribbon Bridge Transporter). The front power unit and rear body units are joined by a hydraulically powered, articulated joint that assists in steering the vehicle and allows a degree of independent movement between the front and rear units for more mobility. The articulated joint transfers automotive power to the rear body unit axles and hydraulic power for any hydraulically operated equipment. The completed units are 8 x 8 systems with two front steering axles.

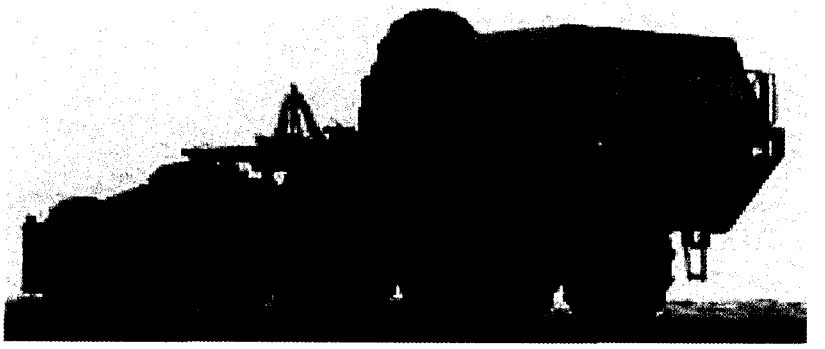
MANUFACTURER	Oshkosh Truck Corporation
CAB	2 man
CONFIGURATION	4 x 4; with trailers 8 x 8
WEIGHT	Curb: 24,500 lbs (MK48 only); with MK14: 40,300 lbs; with MK16: 40,550 lbs with MK15: 50,550 lbs; with MK17: 47,200 lbs
LENGTH	MK48: 19.88 feet; with MK14: 38 feet; with MK16: 33.17 feet with MK15: 37 feet; with MK17: 38 feet
HEIGHT	8.5 feet
WIDTH	8 feet
PAYLOAD CAPACITY	On Road: with MK14: 45,000 lbs; with MK16: 46,000 lbs; with MK15: 20,000 lbs; with MK17: 39,000 lbs. Off Road: with MK14: 40,300 lbs; with MK16: 40,550 lbs; with MK15: 50,550 lbs; with MK17: 47,200 lbs.
GROUND CLEARANCE	23 inches
FORDING	60 inches
GRADIENT	60%
SIDE SLOPE	30%
ENGINE	Detroit Diesel model 8V92TA, turbosupercharged diesel; rated 445 hp
TRANSMISSION	Allison model HT740D, automatic; Speeds: 4 forward and 1 reverse
TIRES	Goodyear Tubeless Radial, size: 16R21
MAXIMUM SPEED	57 mph
CRUISING RANGE	300 miles

HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV)

The mission of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) is to provide a light tactical vehicle for command and control, special purpose shelter carriers, and special purpose weapons platforms throughout all areas of the modern battlefield. The HMMWV is produced in 11 variants to support weapons systems; command and control systems; field ambulances; and ammunition, troop, and general cargo transport.

MANUFACTURER	AM General
CAB	2 to 4 Crew Seating
CONFIGURATION	4 X 4
WEIGHT	5,200 lbs
PAYLOAD	Ranges from 1,920 lbs to 5,300 lbs
LENGTH	15 feet
HEIGHT	6 feet (reducible to 4.5 feet)
WIDTH	7.08 feet
GROUND CLEARANCE	16 inches (loaded)
ENGINE	General Motors, 8-cylinder, 6.5 liter; rated 150 hp @ 3,600 rpm
TRANSMISSION	Allison, fully automatic; Speeds: 3 forward and 1 reverse
TRANSFER	Full Time All Wheel Drive
FORDING DEPTH	2.5 feet (without preparation) 5 feet (with deep water fording kit)
GRADIENT	60%
SIDE SLOPE	40%
MAXIMUM SPEED	55 mph (Governed @ gross weight)
CRUISING RANGE	275 to 337 miles

HEAVY EXPANDED MOBILITY TACTICAL TRUCK (HEMTT)



The Heavy Expanded Mobility Tactical Truck (HEMTT) provides transport capabilities for re-supply of combat vehicles and weapons systems. There are five basic configurations of the HEMTT series trucks: M977 cargo truck with Material Handling Crane (MHC), M978 2,500 gallon fuel tanker, M984 wrecker, M983 tractor, and M985 cargo truck with MHC. This vehicle family is rapidly deployable and is designed to operate in any climatic condition where military operations are expected to occur.

MANUFACTURER	Oshkosh Truck Corporation
CAB	2 man
WEIGHT	Curb Weight: ranges from 32,200 lbs to 50,900 lbs
LENGTH	29.25 feet to 33.42 feet
HEIGHT	Operational: 9.33 feet (all) Transport: 8.5 feet (all)
WIDTH	8 feet (all)
GROUND CLEARANCE	24 inches (all)
ENGINE	Detroit Diesel model 8V92TA, 8-cylinder; rated 450 hp @ 2,100 rpm
TRANSMISSION	Allison model HT740D, automatic; 4 speeds forward, 1 speed reverse
TIRES	Radial with tube, size: 16.00R20, 8 each + 1 spare
MAXIMUM SPEED	57 mph (Governed – all)
CRUISING RANGE	300 miles @ Gross Vehicle Weight Rating (all)
MAXIMUM FORDING DEPTH	48 inches (all)
MAXIMUM GRADE	60% (all)
SIDE SLOPE	30% (all)

HEAVY EQUIPMENT TRANSPORTER SYSTEM (HETS)

The Heavy Equipment Transporter System (HETS) transports tanks and other heavy tracked and wheeled vehicles to and from the battlefield. The HETS consists of the M1070 truck tractor and M1000 semi trailer. The HETS is required to transport, deploy, and evacuate 70-ton payloads, primarily M1 Abrams Tanks, on highways, unimproved roads, and cross-country.

MANUFACTURER	Oshkosh Truck Corporation
CAB	6 man
CONFIGURATION	8 X 8
WEIGHT	Curb Weight: 41,000 lbs Gross Vehicle Weight: 86,000 lbs Gross Combination Weight (GCW): 231,400 lbs
KINGPIN LOAD	45,000 lbs
LENGTH	29.83 feet
HEIGHT	11.79 feet
WIDTH	8.5 feet
ENGINE	Detroit Diesel model 8V92TA, DDEC II and DDEC III; rated 500 hp @ 2,100 rpm
TRANSMISSION	Allison model CLT-754, automatic; 5 speeds forward, 1 speed reverse
TIRES	Michelin Radial, size: 16.00R20, 8 each + 1 spare
MAXIMUM SPEED	45 mph
FORDING	28 inches
GRADIENT	15% (@ GCW)
AIR TRANSPORTABILITY	C5A & C17

M939A2 5-TON TRUCK

The M939A2 tactical truck is a five-ton capacity, six-wheel drive cargo truck used for transportation of all types of supplies. The M939A2 comes in the following body styles: cargo, dump, wrecker, van, and long wheel base cargo. The M939A2 is designed for use on all types of roads, highways, and cross-country terrain. Its central tire inflation system enables the crew to increase or decrease the air pressure in the tires to improve mobility on or off roads. The M939A2 can tow 20,000 pounds.

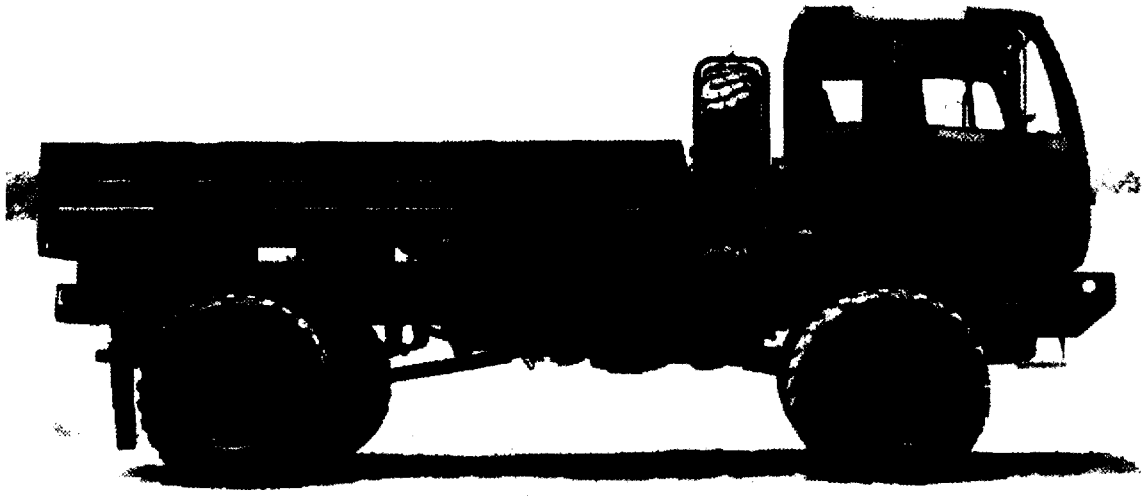
WEIGHT	36,910 lbs
LENGTH	30.17 feet
HEIGHT	10.00 feet
WIDTH	8.12 feet
GROUND CLEARANCE	13.1 inches
FORDING	36 inches (w/o Kit) 60 inches (with Kit)
PAYLOAD	7,000 lbs
TOWED LOAD	20,000 lbs
ENGINE	Cummins 6CTA8.3, diesel, 6-cylinder; rated 240 hp @ 2,100 rpm.
TRANSMISSION	Allison, automatic, model MT654CR
TIRES	14.00 X R20 super sized
MAXIMUM SPEED	50 mph
FUEL CONSUMPTION	5.5 to 6.0 mpg

PALLETIZED LOAD SYSTEM (PLS)

The Palletized Load System (PLS) is comprised of a prime mover truck with integral self-loading and unloading transport capability, a 16.5-ton payload trailer, and demountable cargo beds (flatracks). The vehicle can also be equipped with material handling equipment and/or a winch. The PLS is a key transportation component of the ammunition distribution system and will perform long range hauling, local hauling, and unit re-supply of ammunition. The PLS is a highly mobile system capable of transporting its payload in virtually any type of terrain, in any type of weather, and maintaining pace with the self-propelled artillery systems that it supports.

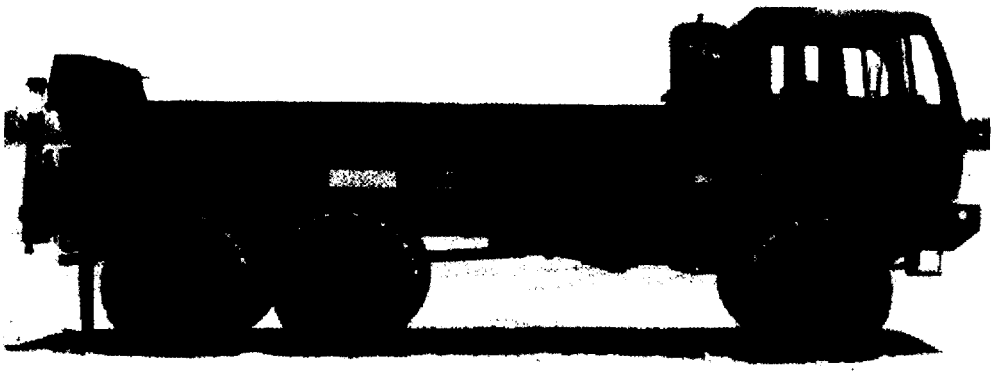
MANUFACTURER	Oshkosh Truck Corporation
CAB	2 man
CONFIGURATION	10 X 10
WEIGHT	Curb Weight: 54,750 lbs Gross Vehicle Weight: 85,595 lbs Combined Gross Vehicle Weight Rating: 136,970 lb
PAYLOAD	33,000 lbs
LENGTH	35.92 feet (with flatrack)
HEIGHT	10.78 feet (with flatrack)
WIDTH	8 feet (with flatrack)
ENGINE	Detroit Diesel model 8V92TA, 500 hp
TRANSMISSION	Allison model CLT-755 ATEC Automatic, Speeds: 5 forward, 1 reverse
AXLES	5 each
TIRES	Central Tire Inflation System
MAXIMUM SPEED	@ Gross Vehicle Weight: 57 mph @ Combined Gross Vehicle Weight Rating: 35 mph

FAMILY OF MEDIUM TACTICAL VEHICLES (2.5-TON)



CREW SEATING	3-Man, cab over engine
WEIGHT	Curb Weight: 16,499 lbs
LENGTH	21.08 feet
HEIGHT	9.33 feet
WIDTH	8 feet
GROUND CLEARANCE	22 inches (Loaded)
FORDING	36 inches (w/o Kit) 60 inches (with Kit)
GRADIENT	60%
SIDE SLOPE	30%
PAYLOAD	5,000 lbs
TOWED LOAD	10,362 lbs
ENGINE	Caterpillar, Diesel, 6-cylinder; 225 hp @ 2,600 rpm
TRANSMISSION	Allison, 7 speeds, automatic, electronic controlled
DRIVE	Full time 4 x 4 Wheel Drive
TIRES	Central Tire Inflation System
MAXIMUM SPEED	58 mph (Governed, at Gross Weight)
RANGE	400+ miles (Minimum, at Gross Weight)

FAMILY OF MEDIUM TACTICAL VEHICLES (5-TON)



CREW SEATING	3-Man, cab over engine
WEIGHT	Curb Weight: 23,677 lbs
LENGTH	25.5 feet
HEIGHT	9.33 feet
WIDTH	8 feet
GROUND CLEARANCE	22 inches (Loaded)
FORDING	36 inches (w/o Kit) 60 inches (with Kit)
GRADIENT	60%
SIDE SLOPE	30%
PAYLOAD	10,000 lbs
TOWED LOAD	21,000 lbs
ENGINE	Caterpillar, Diesel, 6-cylinder; 290 hp @ 2,600 rpm
TRANSMISSION	Allison, 7 speeds, automatic, electronic controlled
DRIVE	Full time 6 x 6 Wheel Drive
TIRES	Central Tire Inflation System
MAXIMUM SPEED	58 mph (Governed, at Gross Weight)
RANGE	300+ miles (Minimum, at Gross Weight)

SMALL EMPLACEMENT EXCAVATOR (SEE)

(No Photo)

The Small Emplacement Excavator (SEE) is a lightweight, all-wheel-drive, diesel-engine-driven, high-mobility vehicle with a backhoe, a bucket loader, and other attachments. The SEE is used to rapidly dig combat emplacements such as crew served weapon positions, command posts, and individual fighting positions.

CREW	1 operator
WEIGHT	16,000 lbs
MAXIMUM SPEED	Road: 40 mph
MAJOR SYSTEMS	Front mounted light-weight bucket; rear mounted backhoe
ATTACHMENTS	Hydraulic attachments for rock drill, pavement breaker, chain saw, and auger
AIR TRANSPORTABLE	C130 & larger

SMALL ARMS WEAPONS

M242 25 mm AUTOMATIC GUN

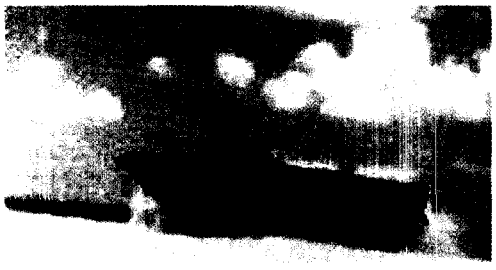
The M242 25 mm Bushmaster Automatic Gun (Chain Gun) is used on the Bradley Fighting Vehicle and a variety of land and sea vehicles. The Marine Corps carries this weapon on the Light Armored Vehicle (LAV) while the Navy carries it on many of its ocean-going vessels to deal with small attack craft. The Bushmaster has a single barrel with an integrated dual-feed mechanism and remote ammunition selection. Either armor piercing (AP) or high explosive (HE) ammunition may be selected with the flick of a switch. The gunner may select from single or multiple shot modes. The standard rate of fire is 200 rounds per minute with a range of 2,000 meters (depending on ammunition used)

MANUFACTURER	McDonnell Douglas
CALIBER	25mm Dual Feed
MUZZLE VELOCITY	3,610 ft/sec (M792, M793 ammo) 4,462 ft/sec (M791) 4,545 ft/sec (M919)
WEIGHT	Auto Gun Receiver: 90 lbs Barrel Assembly: 95 lbs Auto Gun Feeder: 59 lbs Total Gun System: 244 lbs
LENGTH (OVERALL)	108.7 inches
WIDTH	13.0 inches
LENGTH	15.0 inches
RANGE	Up to 2,000 meters
RATE OF FIRE	Single Shot; 100, 200 rounds per minute
TIME TO RATE	0.15 seconds
TIME TO STOP	0.12 seconds
POWER REQUIRED	1.0 hp at 24 Vdc
PEAK RECOIL FORCE	12,000 lbs-force (Standard gun) 9,000 lbs-force (Enhanced gun)

DEPARTMENT OF DEFENSE COMBAT VEHICLES & ARTILLERY SYSTEMS UNDER DEVELOPMENT OR NEWLY DEVELOPED

(NOT SUPPORTED AT ANY DOD INSTALLATION)

EXPEDITIONARY FIGHTING VEHICLE (EFV)
(FORMERLY ADVANCED AMPHIBIOUS ASSAULT VEHICLE [AAAV])



The Expeditionary Fighting Vehicle (formerly named the Advanced Amphibious Assault Vehicle [AAAV]) will replace the Amphibious Assault Vehicle (AAV) as the Marine Corp's primary combat vehicle for transporting troops on land and from ship to shore. The EFV possesses the ability to launch forces from 20 to 25 nautical miles out to sea and transport them to shore at speeds in excess of 20 to 25 knots (three times the speed of the AAV).

MANUFACTURER	General Dynamics Land Systems
CREW	3 + 17
WEIGHT	Empty: 62,880 lbs Combat Loaded: 74,500 lbs
LENGTH	Overall, Land: 30.6 feet Overall, Water: 35 feet
HEIGHT	10.8 feet
WIDTH	12 feet
GROUND CLEARANCE	16 inches
GRADIENT	60%
SIDE SLOPE	40%
VERTICAL OBSTACLE	3 feet
TRENCH CROSSING	8 feet
ENGINE	MTU model MT883 diesel, 12-cylinder, developing 2,700 hp @ 3,300 rpm in water mode and 850 hp @ 2,600 rpm in land mode
TRANSMISSION	Allison model X4560, hydro-kinetic, 6 speeds
MAXIMUM SPEED	Road: 45 mph; Water: 23 to 29 mph
CRUISING RANGE	Land: 325 miles; Water: 75 miles
ARMAMENT	Main: 30 mm MK44 Cannon Coaxial: 7.62 mm M240 Machine Gun
NBC SYSTEM	Yes
GUN CONTROL	Gun Stabilizer (horizontal and vertical); Gun elevation/depression: +45/-10°; Traverse: 360°
NAVIGATION	Position Locating Reporting System (PLRS) Global Positioning System (GPS)

XM777 LIGHTWEIGHT HOWITZER

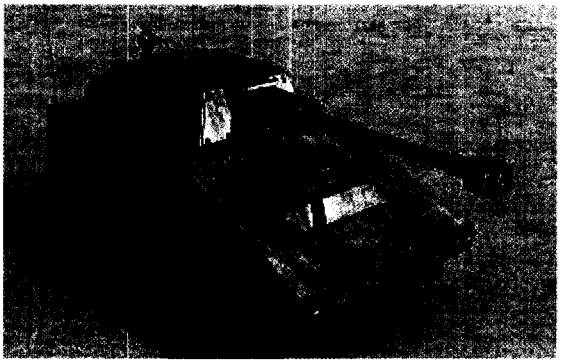
The XM777 Lightweight Howitzer is in the development stage. In the U.S. Army, the XM777 is planned to replace the M198 Towed Howitzer in general support missions. The specifications provided below are from prototype development.

CREW	5
WEIGHT	6,985 lbs (Test Bed I) 4,990 lbs (Target)
LENGTH (TRAVELING)	21.5 feet
LENGTH (FIRING)	25.3 feet
WIDTH (TRAVELING)	6.9 feet
WIDTH (FIRING)	10.6 feet
HEIGHT (TRAVELING)	7.2 feet
RECOIL SYSTEM	Hybrid soft recoil
BREECH MECHANISM	Screw, semi-automatic
CARRIAGE	Four trail
GROUND CLEARANCE	18 inches
TIRES	not available
TOWING SPEEDS (DESIRED)	Improved Roads: 55 mph Secondary Roads: 35 mph Cross Country: 15 mph
TOWING VEHICLE	not available
AIR TRANSPORTABLE	C-130
ARMAMENT	155mm Cannon
BARREL LENGTH	not available

XM777 LIGHTWEIGHT HOWITZER - Continued

MAXIMUM RANGE	M483A1 Projectile: 11.2 miles Rocket-Assisted Projectile: 17.25 miles
ELEVATION RANGE	+73/-4°
TRAVERSE	22.5° (left and right)
RATE OF FIRE	Intense: 5 rounds per minute Sustained: 2 rounds per minute
FIRE CONTROL	Fully automated fire control system including a self-locating module, direction finding equipment and a dynamic reference unit which will be updated by the GPS.
PRE-PLANNED IMPROVEMENTS	Loading device; powered elevation and traverse

FUTURE COMBAT SYSTEMS (FCS)



The Future Combat Systems (FCS) is the U.S. Army's flagship transformation program. The FCS program is a joint Defense Advanced Research Projects Agency (DARPA)/Army program for achieving the Army's vision of fielding an "Objective Force" beginning this decade. The Objective Force will be lighter and more mobile, meeting the Army's transformation requirements to put a combat-capable brigade anywhere in the world within 96 hours.

The FCS will be a networked "system of systems" that uses advanced communications and technologies to integrate the soldier with "families" of manned and unmanned platforms and sensors. The FCS will have a number of air and ground based systems, the latter of which will be split between manned and unmanned systems.

Manned systems are expected to include:

- Infantry Carrier Vehicle
- Mounted Combat System
- Non-Line-of-Sight Cannon
- Non-Line-of-Sight Mortar
- Command and Control Vehicle
- Maintenance and Recovery Vehicle
- Medical Treatment and Evacuation

Unmanned platforms are land and air based and could include:

- Unmanned Aerial Vehicle (UAV) Class I, II, III and IV
- Unmanned Ground Vehicle – small manpackable
- Unmanned Ground Vehicle – armed robotic vehicle
- Unmanned Ground Vehicle - MULE

INFORMATION PAPER

AMSTA-AN-CO UNCLASSIFIED 18 Mar 2004

SUBJECT: Joint Capabilities – Efforts towards Joint Transformation

America's Combat Vehicle Support Center

BACKGROUND: Anniston Army Depot (ANAD), located in Anniston, AL, is the only Government-Owned, Government-Operated (GOGO) facility capable of performing full spectrum maintenance on both heavy and light-tracked vehicles. ANAD is one of six industrial facilities in the Ground Systems Industrial Enterprise (GSIE). Major tenants include Defense Logistics Agency's (DLA) Defense Distribution Anniston Activity, Anniston Chemical Activity and Demilitarization Facility, Anniston Munitions Center, Center for Military History, Test Measurement & Diagnostic Equipment (TMDE) Support Center, 722nd Explosive Ordnance Disposal (EOD), Defense Reutilization Marketing Office, General Dynamics Land Systems (GDLS), United Defense Limited Partnership (UDLP), Honeywell and Westinghouse. Our northern boarder joins Pelham Range (National Guard Training Center).

CURRENT STATUS:

- **Products/Services:**
  - Overhaul/recapitalization of **combat vehicles** for the Army, Marine Corp, Army Reserve, National Guard and Foreign Military Sales (FMS).
  - Overhaul of **small arms and howitzers** for the Army, Marine Corps, Air Force, and Navy.
  - Overhaul of locomotives and large generator sets for DoD and other Federal Agencies.
  - Overhaul of major subassemblies (i.e., AGT-1500 turbine engine, reciprocating engines, transmissions, optical fire control, etc.) for the Army and Marine Corps.
  - New production/upgrade of combat vehicles through partnerships with UDLP and GDLS for the Army, Marines and National Guard. 515 Stryker Vehicles produced at ANAD to date.
  - Joint weapon system development such as the M1 Panther Vehicle and Assault Breacher Vehicle (ABV) for the Army and Marine Corps.

- **Multi-functional Capabilities Supporting Joint Force:**
  - Combat vehicle overhaul and re-manufacturing.
  - Combat vehicle production and major system upgrades.
  - DoD small arms repair center.
  - Locomotive and large generator repair and overhaul
  - Fielding Teams and Forward Area Repair support

- **Capabilities Residing Only at ANAD:**
  - Special armor repair including a secure facility for classified armor repair.
  - Only AGT-1500 test facility in DoD.
  - DoD small arms rebuild facility and storage
  - Infrastructure (roads, facilities, etc) capable of supporting combat vehicles in excess of 70 tons.
  - Largest capacity of any DOD combat vehicle repair facility (4.1 million man-hours on 1 shift).

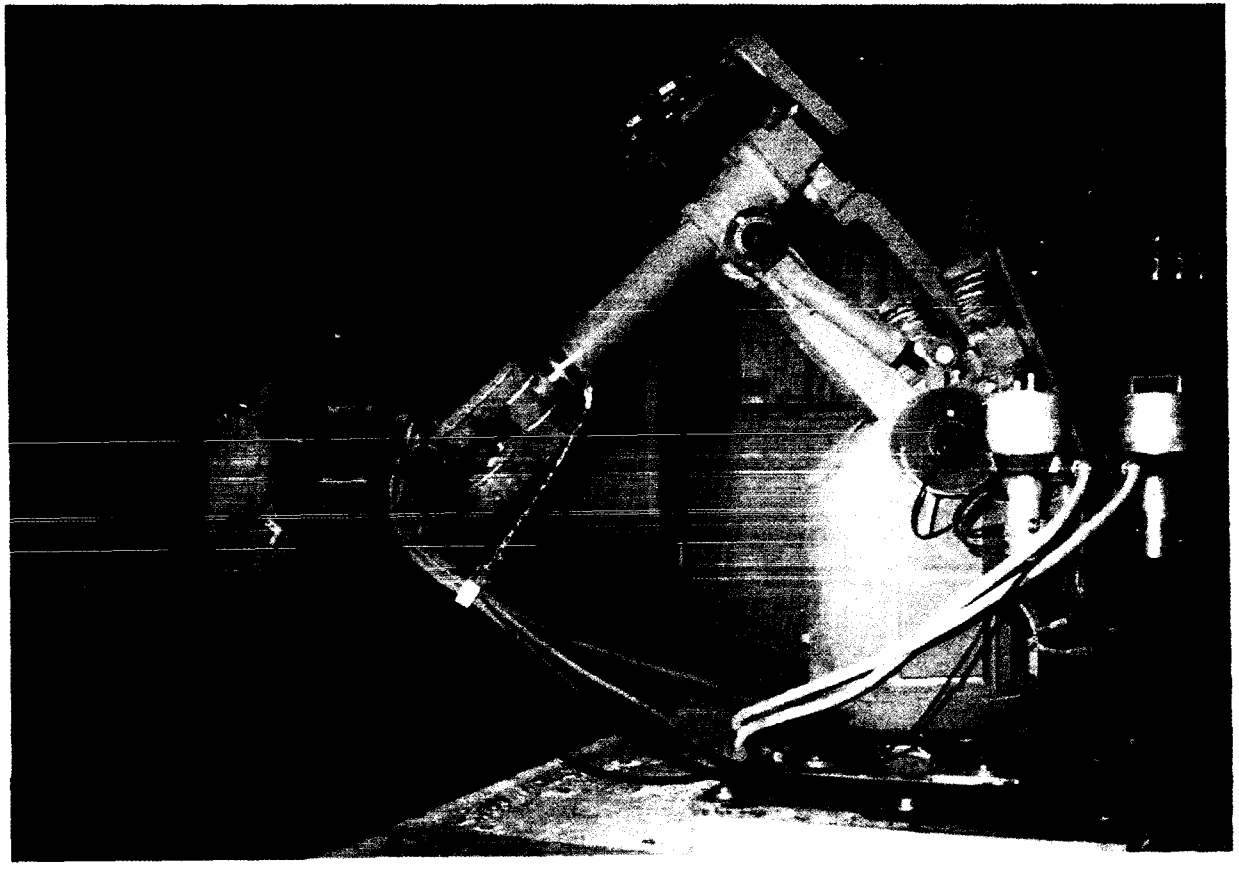
- **What ANAD Does Best**: Anniston Army Depot is a Center of Industrial Technical Excellence (CITE) for combat vehicles, artillery systems and small caliber weapons, and a DoD leader in public/private partnership agreements. Keying on Army Transformation initiatives we are building our Master Plan for the future.

- **Customers:** Army, Marine Corp, Army Reserve, Navy, Air Force, National Guard, and FMS.

Gantry Machining Center

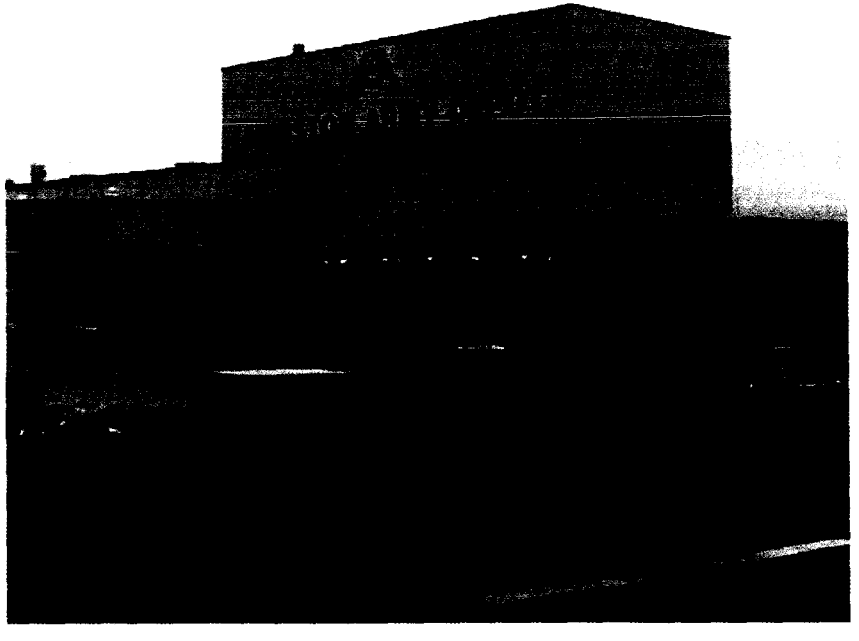
A six-axis, computer numerically controlled (CNC) machining center (with dual work zones) capable of handling loads up to 30 tons. The 60 ft. x 20 ft. x 10 ft. center contains five auxiliary spindle units (ASU), including a heavy duty ASU capable of delivering 100 horsepower. The CNC control and feedback devices were recently upgraded.

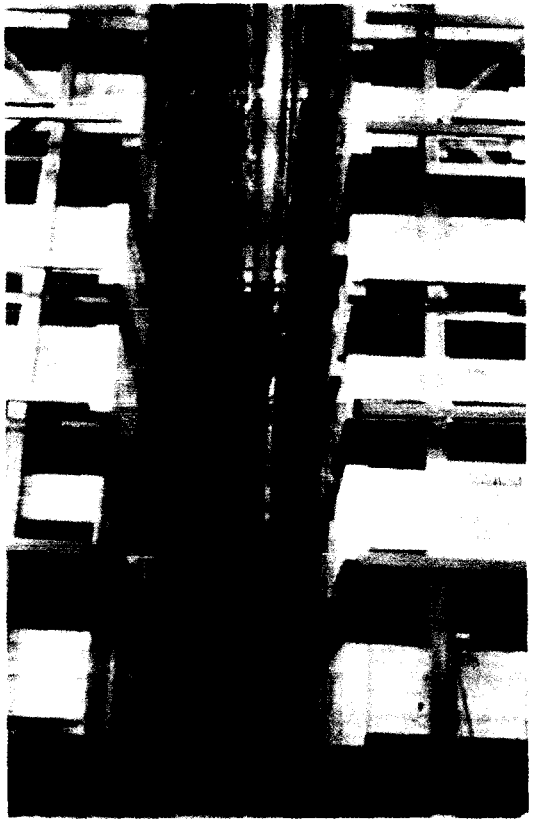
AR1000 Metal Spray Robot



Heavy duty, six-axis articulated arm robot for application of metal spray coatings. The robot has double turntables with 1,000 lb. capacity as well as computer-controlled accuracy to .020". The axis movement is programmed in increments of one thousandths of an inch.

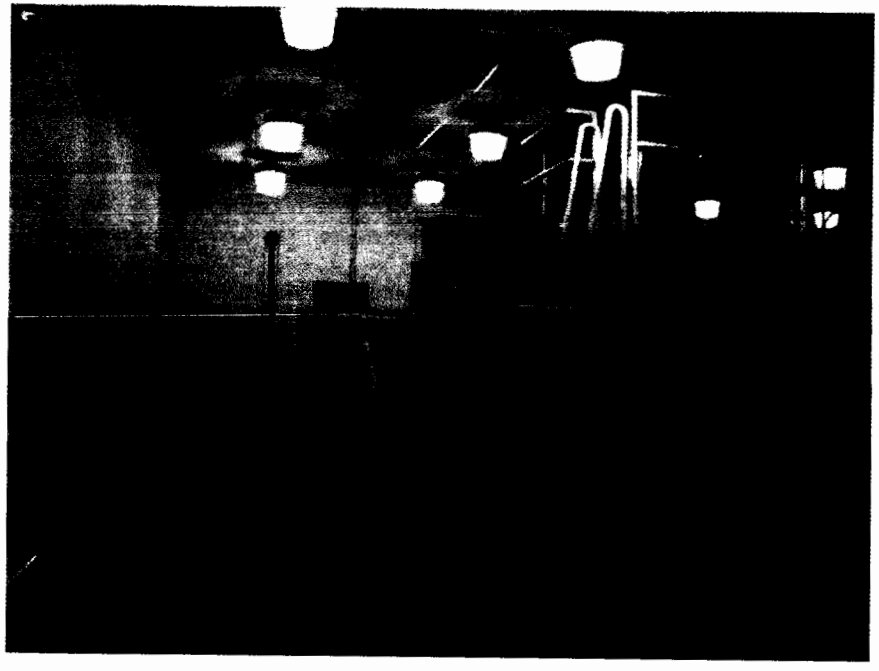
Automated Storage and Retrieval System (ASRS)





The system accommodates unit loads of 40" x 48" and 52" x 52" at 2,000 lb. capacity per location, 24" x 48" mini load drawers with 500 lb. capacity, and oversized loads with 5,000 lb. capacity. Automatic stacker cranes and side loaders serve storage locations. The ASRS is totally computer-controlled including real time status of all inventory locations, quantities, and item NSN. Processing, accumulation, and kitting operations are also integrated into the process.

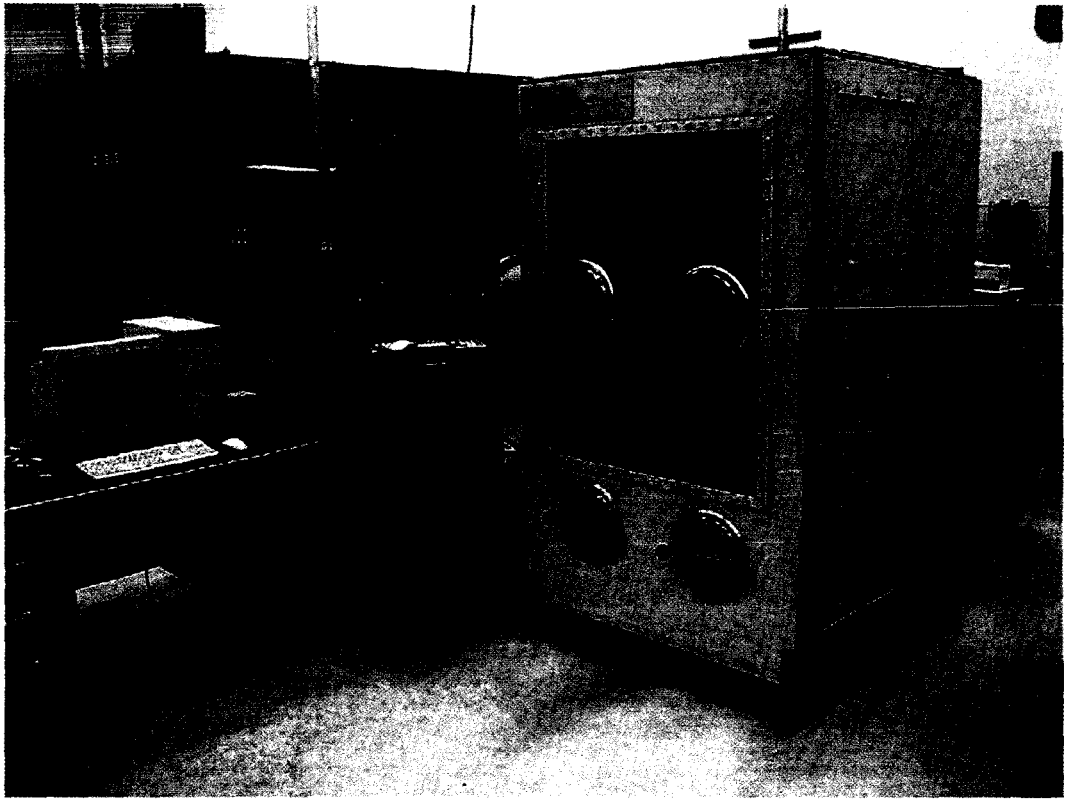
Electron Beam Welder



ANAD recently installed a new Advanced Vacuum Resources 1500 EB Welder. It is hard vacuum EB welding system that has a 78" x 50" x 66" high chamber. The beam power is 150 kilovolts, 100 milliamps, and 15 kilowatts. The system is under full CNC control including the tilt/rotary fixture. The machine is also equipped with a CNC controlled wire-feeder. To facilitate loading and unloading, the machine is equipped with a rollout table.

ANAD also has a Leybold EBW 1500 system with 55" x 35" x 47" stainless vacuum chamber. The system contains a 7.5KW vertical electron beam gun with precision optical viewing system and programmable controller. The system can weld copper, cobalt, titanium, aluminum, nickel, steels, alloys, and dissimilar metals.

Laser Engineered Net Shaping (LENS)



The Laser Engineered Net Shaping Machine (LENS) is a laser powered, powder metal deposition system used for rapid prototyping and component repair. The LENS process can be used to weld repair previously un-repairable components. The Heat Affected Zone (HAZ) in normal welding applications can have detrimental effects on the welded component. The heat generated during the LENS Process is concentrated to a small focal point, in the .010" range, and the HAZ is minimal, allowing for much smaller welds and deposition rates. The LENS is primarily used for AGT 1500 Turbine Engine component repair.

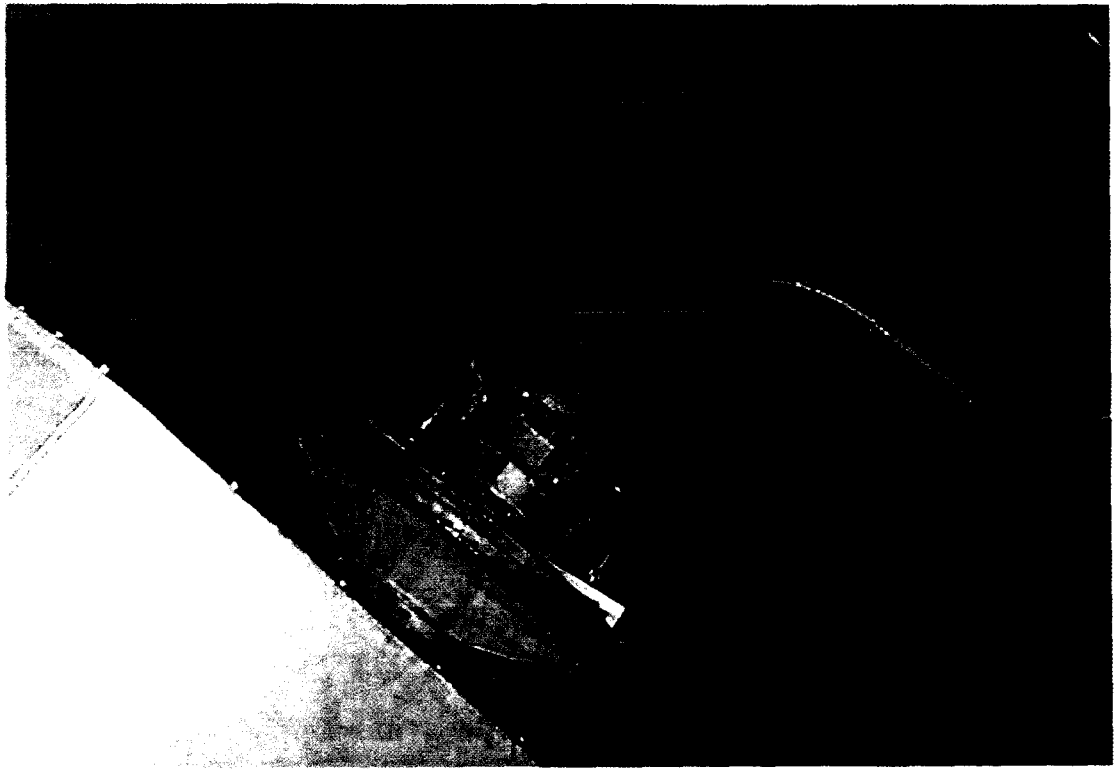
Sciaky Resistance Welders

The Sciaky Resistance Welder, a specialized computer-controlled welder, repairs and fabricates recuperators for the AGT 1500 turbine engine. The recuperator is constructed of over 500 plates of .008" thick INCONEL 625 material. The welder is capable of welding both the ID and OD flanges. In order to weld the recuperator plates, the welding head must be positioned between the plates inside an .08" opening. This is accomplished using a computer-controlled three-axis positioning fixture. **Anniston currently has 5 of these welders and is the <u>only CONUS depot with this recuperator repair capability</u>.**

Vehicle Test Track

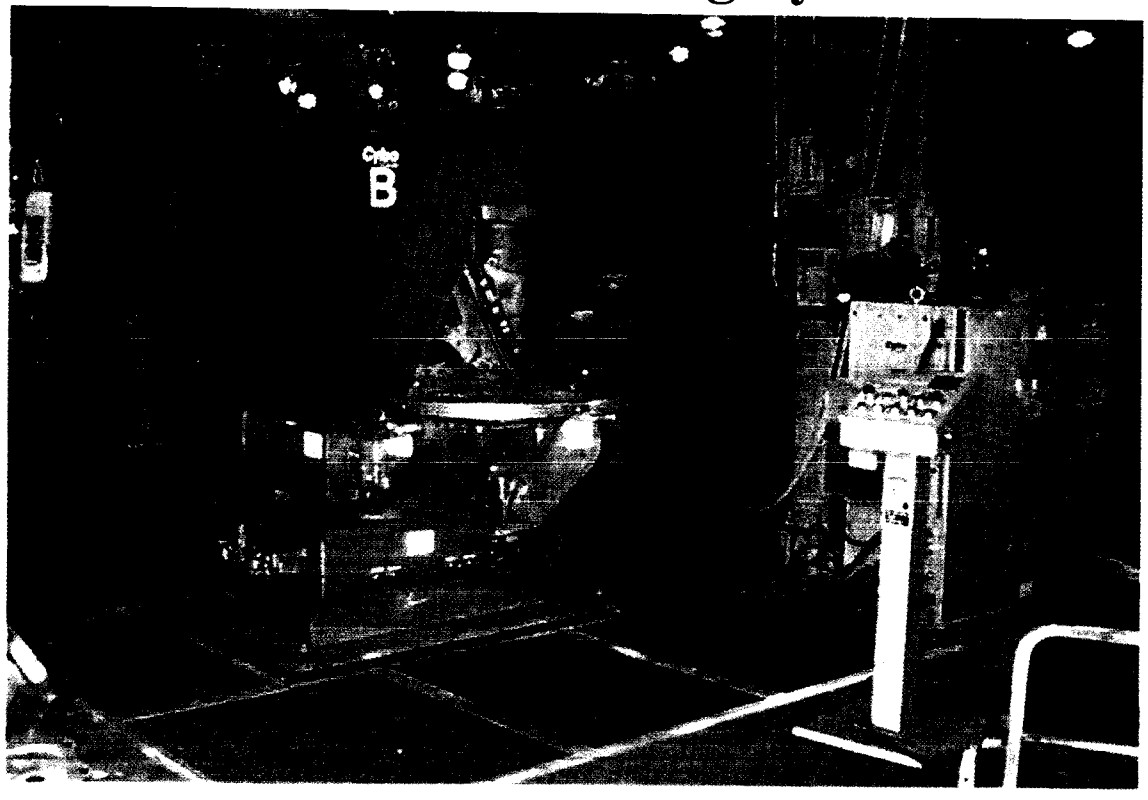
A 1.13-mile, hard surface, closed loop, oval track accommodates the full dynamic testing of tracked and wheeled vehicles. The track includes straight-a-ways and 180 degree banked curves sufficient to allow full speed testing, 30/40/60 percent slopes, a weapons stabilization course, Laser Test Range, Survey Control Points for Vehicle Position/Navigation System Testing, and weapon bore-sighting/synchronization and a weapons stabilization course. Also included are directional and night lighting, which allows for 24-hours operation. There is also access to the Ammunition Storage Area, which allows ANAD personnel to perform cross-country mobility training.

High Pressure Water Jet Coating Removal System



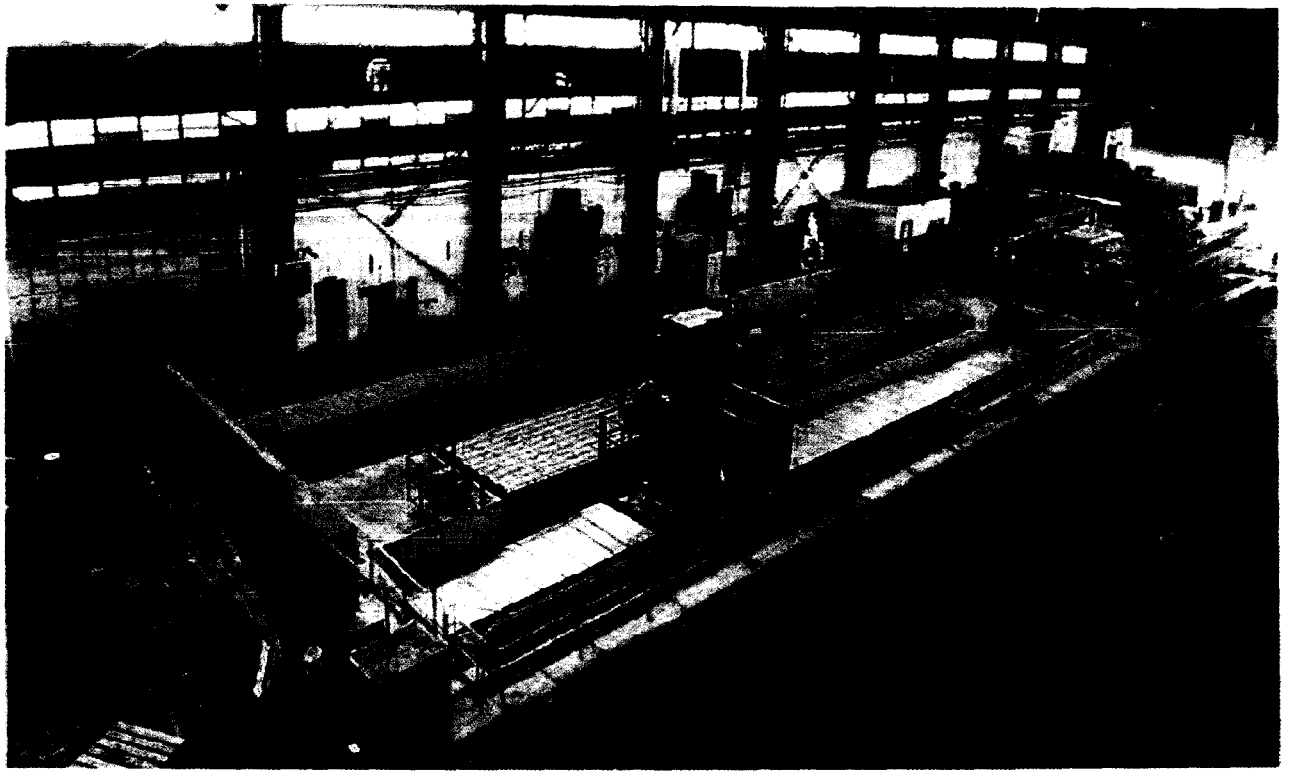
This system is designed for the removal of thermal spray coatings (plasma, thermal powder, and/or wire) from engine parts. ANAD utilizes various types of thermal spray coatings (nickel/chrome/aluminum/zirconium-oxide/yttrium, etc.). It is also an alternative to vapor degreasing along with removal of paint, plating, rubber, grease and/or grime from various engine containers and/or component parts. The high-pressure intensifier is designed for 60,000 psi with a maximum operating pressure of 55,000 psi and minimum operating pressure of 7,500 psi. It operates with a flow rate of no less than 2.0 gallons per minute at 55,000 psi. This system is funded for upgrade in 2004.

Robotic Welding System



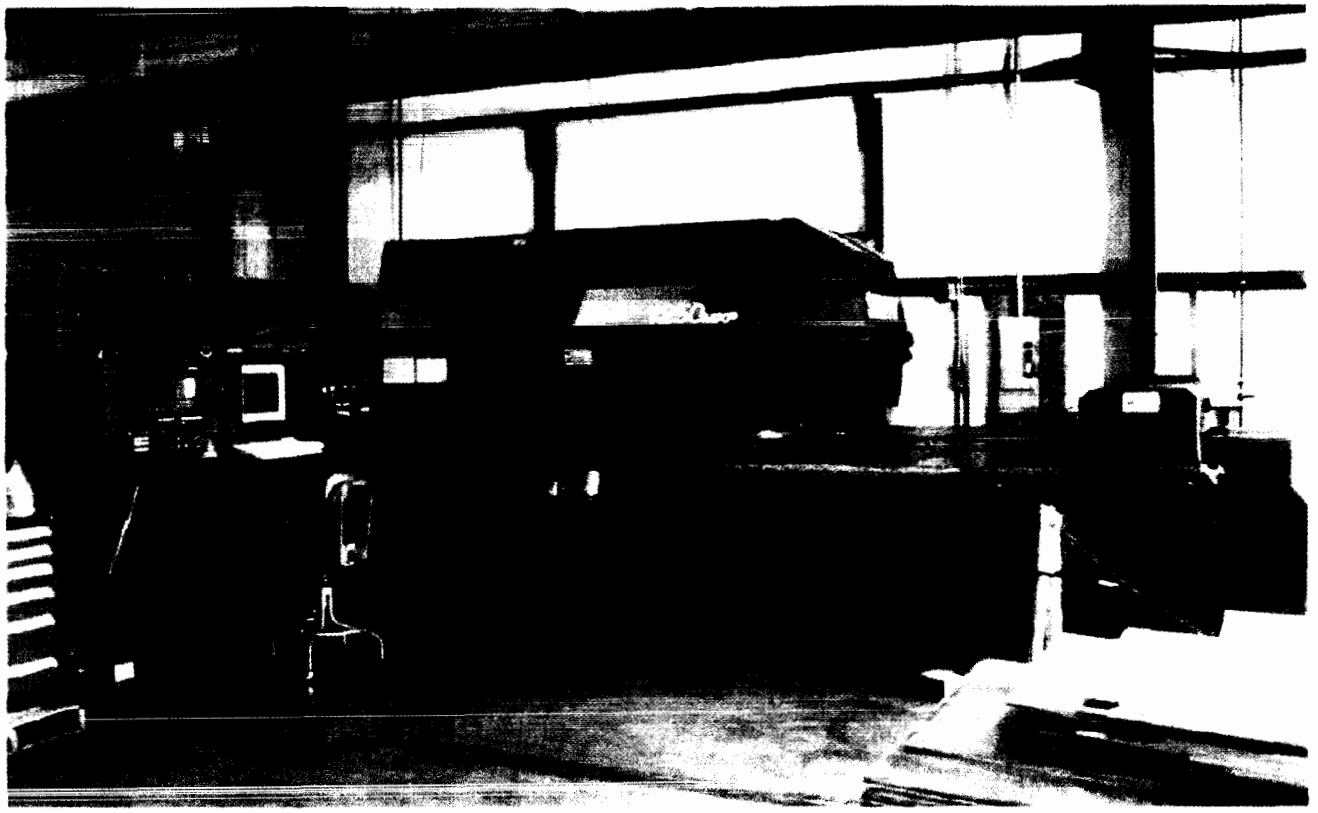
The robotic welding system was purchased in 1996. The robot configuration consists of a 5-axis rotary positioner and a headstock/tailstock positioner under control of the robot controller. The rotary positioner will allow the operator to fixture a part while one is welded. The headstock positioner will allow holding and positioning of parts 36" in diameter to a maximum length of 100" and a maximum weight of 1,000 pounds. The modern "teach" control reduces the programming time resulting in less set up time. The additional positioners allow several part configurations to be held that could not be done on the old robotic welding system. The welding and plasma power supplies are based on current welding/burning technology.

CNC Horizontal Machining Center Dual Column



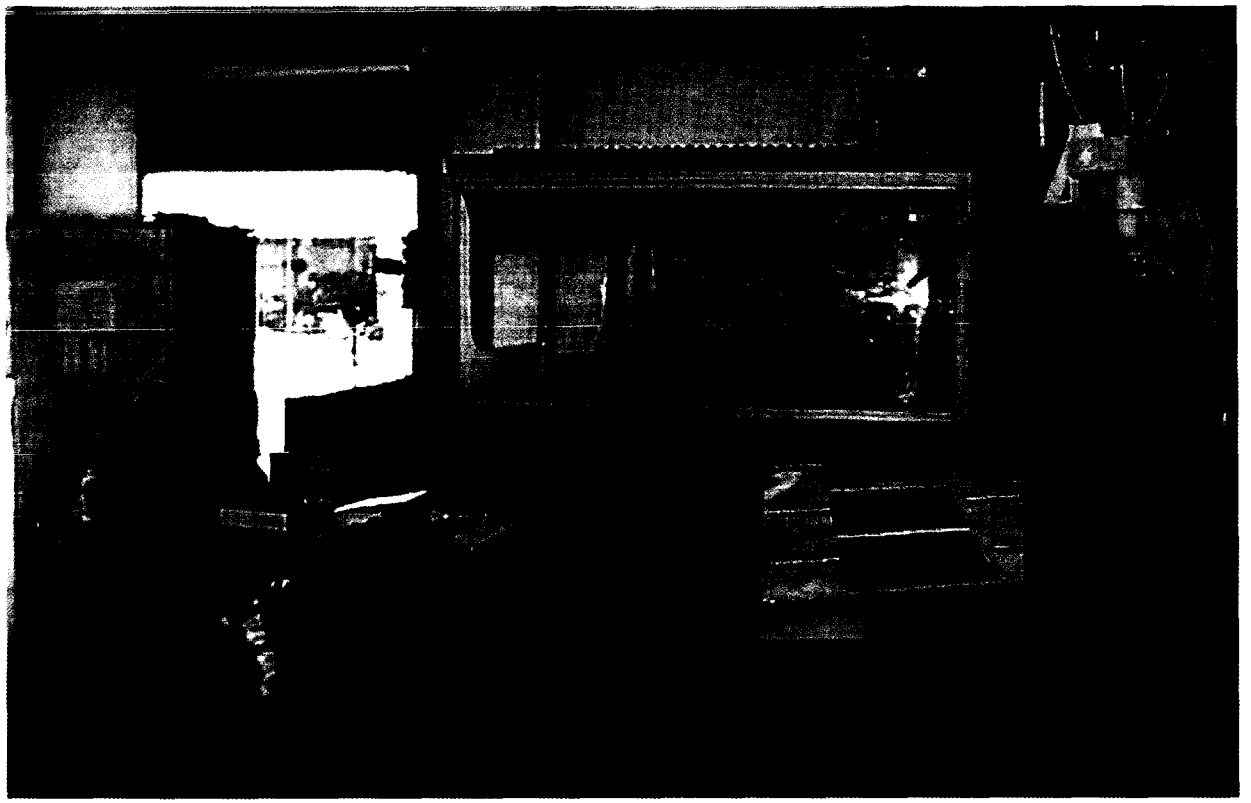
This machine incorporates special features not found in any other machines on depot. These features allow this machine to perform machining operations previously performed on several different machines and setups. The machine is equipped with a programmable universal milling head that is capable of orienting the spindle normal to the area being machined. It is also equipped with a programmable rotary table capable of supporting 70,000 pounds. This gives the machine the ability to machine any area on a vehicle without having to re-setup or reposition the vehicle thereby reducing setup time. The dual spindle/column design of this machine will allow simultaneous operations on opposite sides of a vehicle as well as coordinated machining with both spindles/columns synchronized such as in line boring. In addition to the special features of this machine is the machine's 70-foot length. The machine is large enough to accommodate more than one vehicle at a time.

CNC Laser/Punching/Nibbling Machine



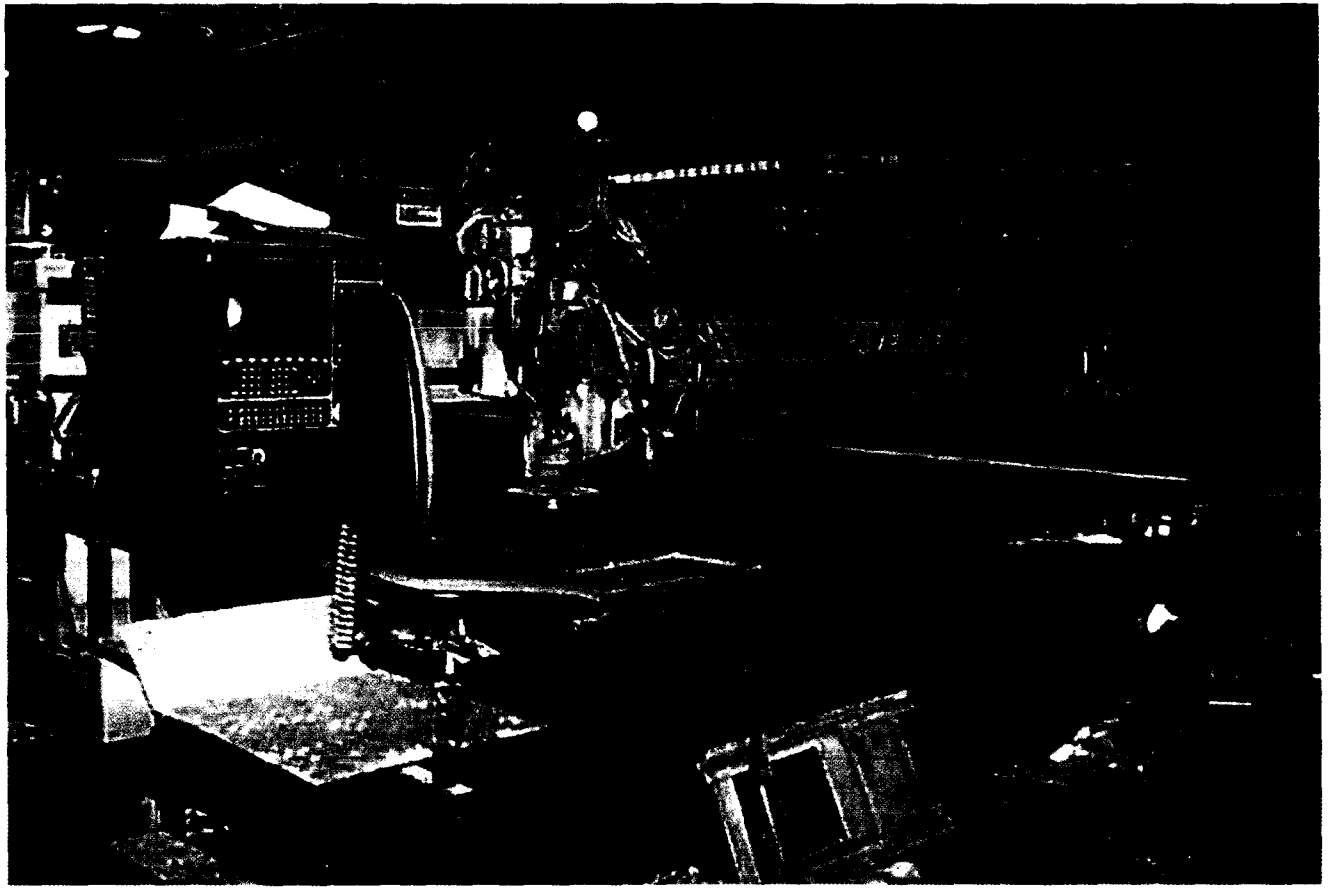
The combination punch/laser machine will achieve greater productivity than a stand-alone laser or punching machine. Holes (up to 1" diameter) are processed more efficiently by punching. The laser only configuration will require a follow-on machining operation to clean up the holes. The laser cutting process is more efficient in processing shape cutting than the punch only configuration (nibbling). The ± .004" accuracy of the laser will allow most parts to be completed without a follow on machining operation. The combination Laser/Punch machine provides the best method for processing sheet metal parts (up to 3/8" thickness) of varying shapes, sizes, and hole configuration.

CNC Abrasive Water Jet Cutting Machine



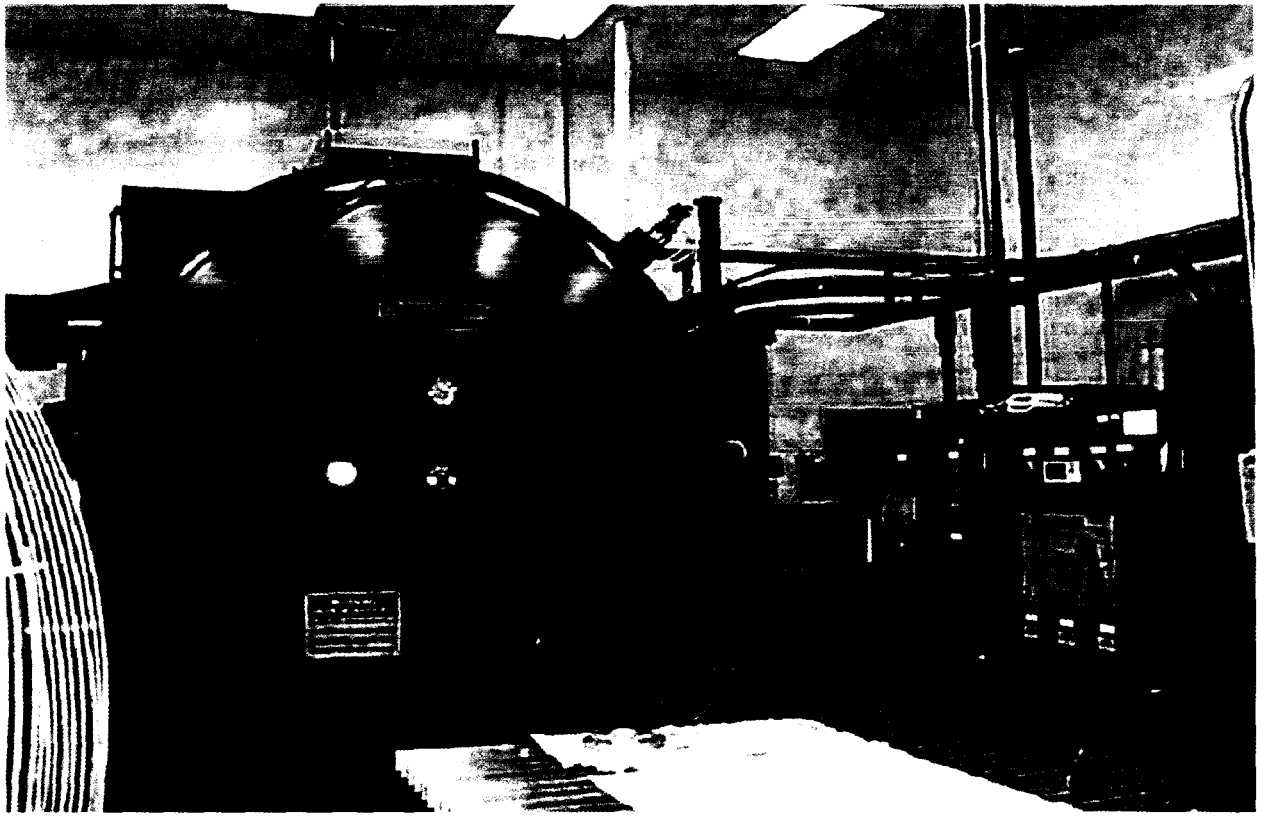
The Abrasive Waterjet Cutting Machine uses ultra-high pressure water (55,000 psi) and introduces a garnet abrasive into the water stream to cut many different material types. The waterjet machine is a cold cutting process. Unlike the laser, plasma, and oxy-fuel cutting, there is no heat-affected zone associated with the cut. This simplifies follow on operations such as machining and heat-treating. The accuracy of this machining process is advertised at ± .010" although ANAD has achieved ± .002". The machine can cut up to 3" material with a reasonable cut quality. Thicker material can be cut, but the quality deteriorates. This machine is also capable of cutting many non-metallic materials, such as glass, composites, and rubber.

CNC Plasma/Oxy-Fuel Cutting Machine



The Oxy-Fuel/Plasma Cutting Machine will cut up to 6" thick material and is equipped with four Oxy-Fuel torches and one 1,200 amp Plasma torch. The accuracy of this machine is ± .030". The machine can accommodate a 20' x 10' piece of material. This machine is faster than the Laser Waterjet processes, but the trade-off is accuracy. If a part has a ± .030" or greater tolerance it can be cut and finished on this machine.

Vacuum Furnace



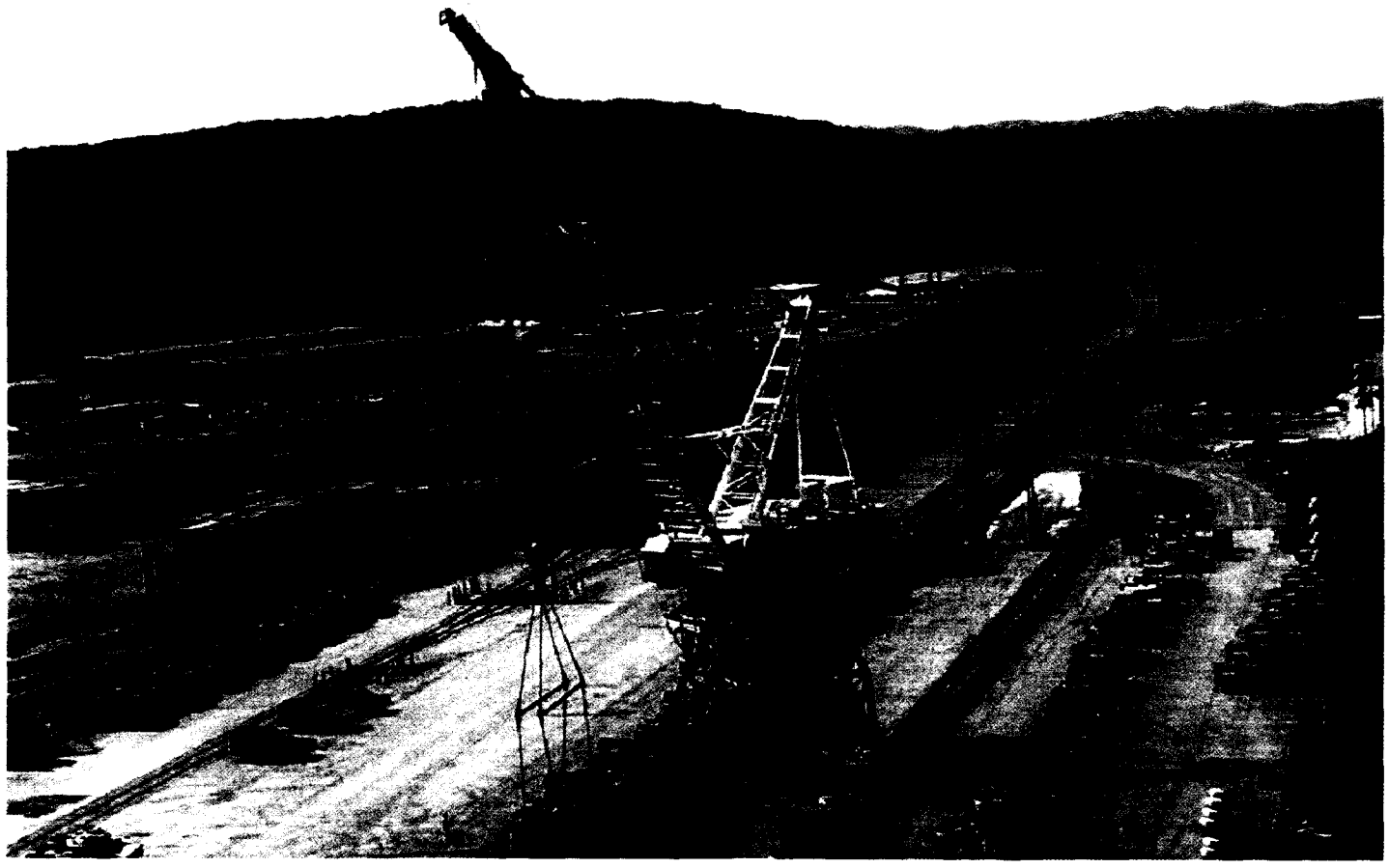
ANAD has 2 vacuum furnaces. The vacuum furnaces are utilized for protective atmosphere heat-treating of tool steels and heat treating and brazing of stainless steel and high temperature nickel base alloys.

The furnace shown in the photo above has a chamber size of 48" high x 48" wide x 6" deep and operates at a vacuum level of .1 micron and temperatures of up to 2,400 degrees F. The other furnace (not shown) has a chamber size of 36" high x 36" wide x 48" deep. It operates at an ultimate vacuum of 5 times 10 to the minus 5 TORR up to 2400 degrees F. Both furnaces are equipped with argon backfill for quick cooling of parts.

Spinner Hanger

Spinner hangers are wheel type abrasive blast cleaning systems, which reduce repair cycle time and labor requirements. The unit at Bldg 432 has a work envelope of 12.5' x 27', 10 wheels, bridge crane is equipped with a 27 ton and 15 ton hoist for loading of the work. The unit at Bldg 409 is equipped with a work conveyor system (4 work trucks, 5,000 lb. lift capacity each); work envelope is 6' x 8' and 4 wheels.

75-Ton Gantry Crane



Anniston's receiving and shipping area is designed for expeditious loading/ unloading entire trainloads or individual truckloads of materials from shipping containers to wheeled or tracked vehicles. A 75-ton Gantry Crane capable of lifting an entire M1 tank, a 600 ft long railway level loading/ unloading dock, and floodlighting for 24-hour operation ensures that Anniston is capable of meeting all receiving and shipping requirements during peacetime or emergency/wartime surge.

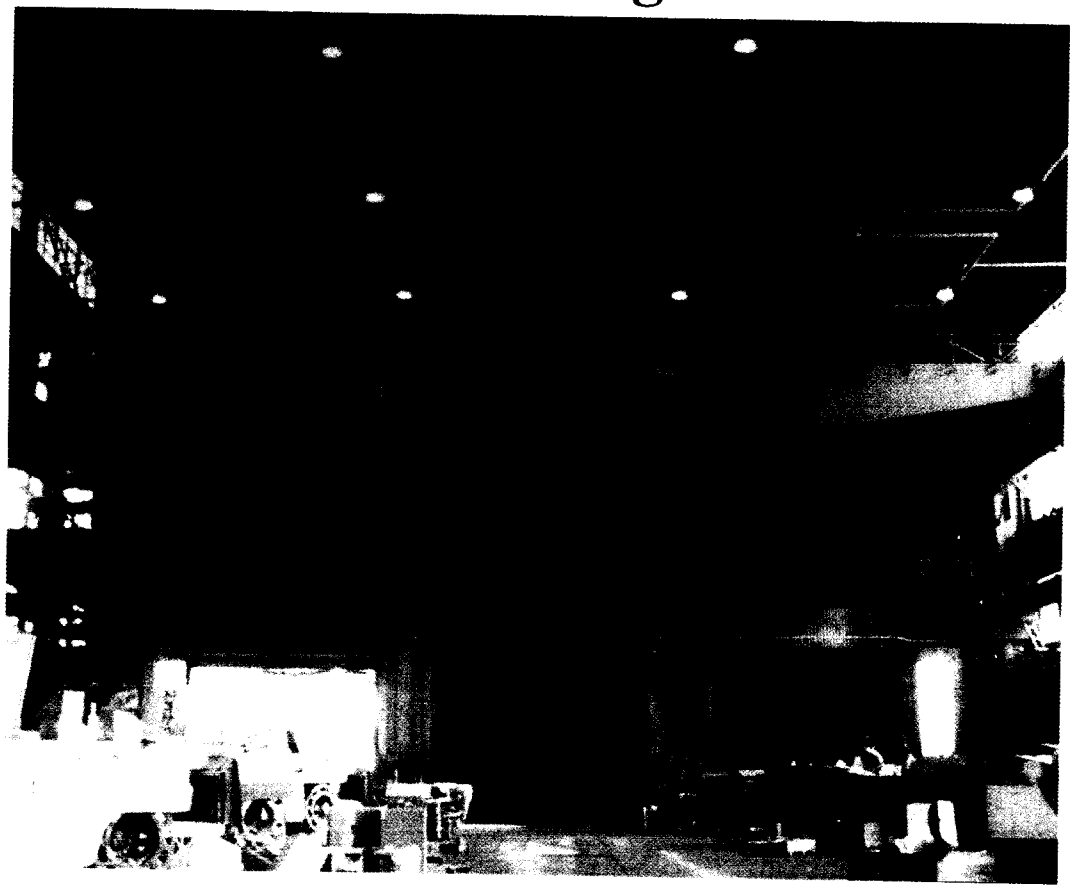
Classified Armor Repair Facility

A 40' x 83' (3,320 sq. ft.) secure facility for special armor repair. It contains a 20-ton overhead bridge system, controlled entry, an exterior surveillance system, intrusion protection, data transmission/receipt, and a 20-hour backup battery for the control unit and monitoring station. The facility meets all security requirements to support DU armor repair.

5-Acre Stanley Combat Vehicle Facility

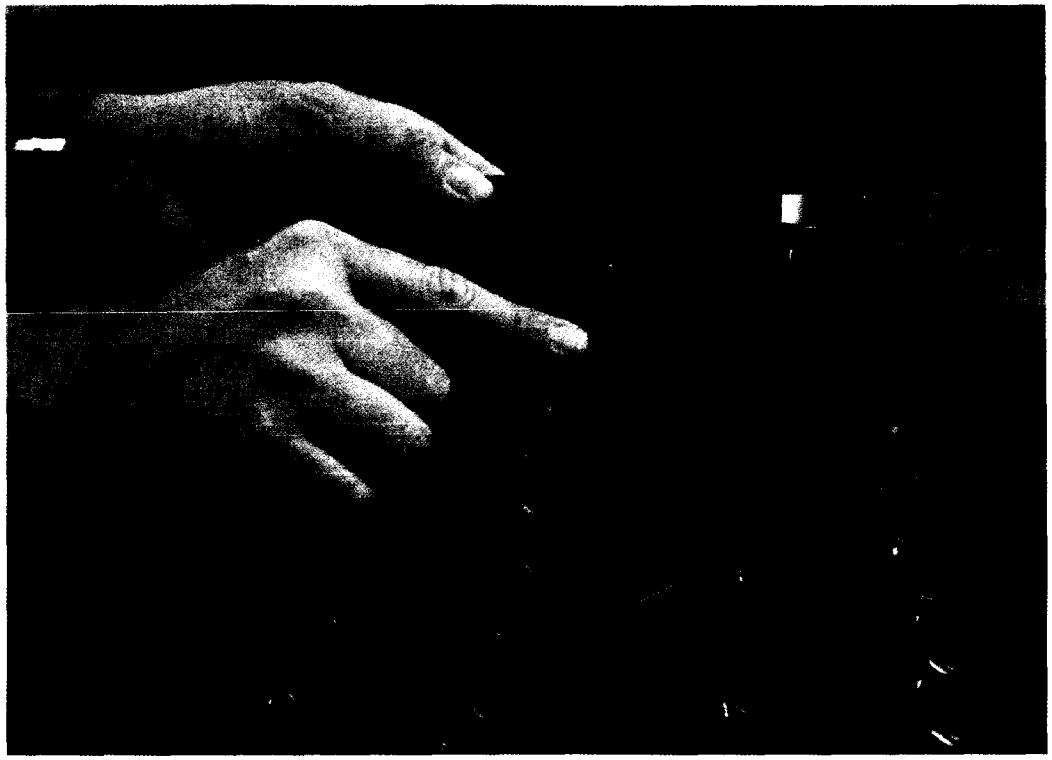
Building 400, Vehicle Maintenance Facility, is a 229,768 sq. ft facility. It has two 100 ft clear spans and one 50 ft clear span, each approximately 855 ft long. This building boasts five high-level cranes with lifting capabilities of 20 to 60 tons to a height of 35 ft (hook height). There are also eight low level cranes with 20-ton lifting capacity. Tracked vehicle disassembly, welding and machining, hull and special armor repair, and reassembly are among the many tasks performed in this building.

60 Ton Bridge Crane



Located in Building 400, Vehicle Maintenance Facility, these cranes have a 60-ton lifting capacity and a 35 ft lifting height (hook height). The crane spans approximately 100 feet with a linear travel of approximately 855 feet. This capacity and range of movement provides the flexibility required by a large maintenance operation to optimize facility and equipment utilization and relocate functioning workload to maximize production and/or accept new work.

DOD Small Arms Rebuild Facility

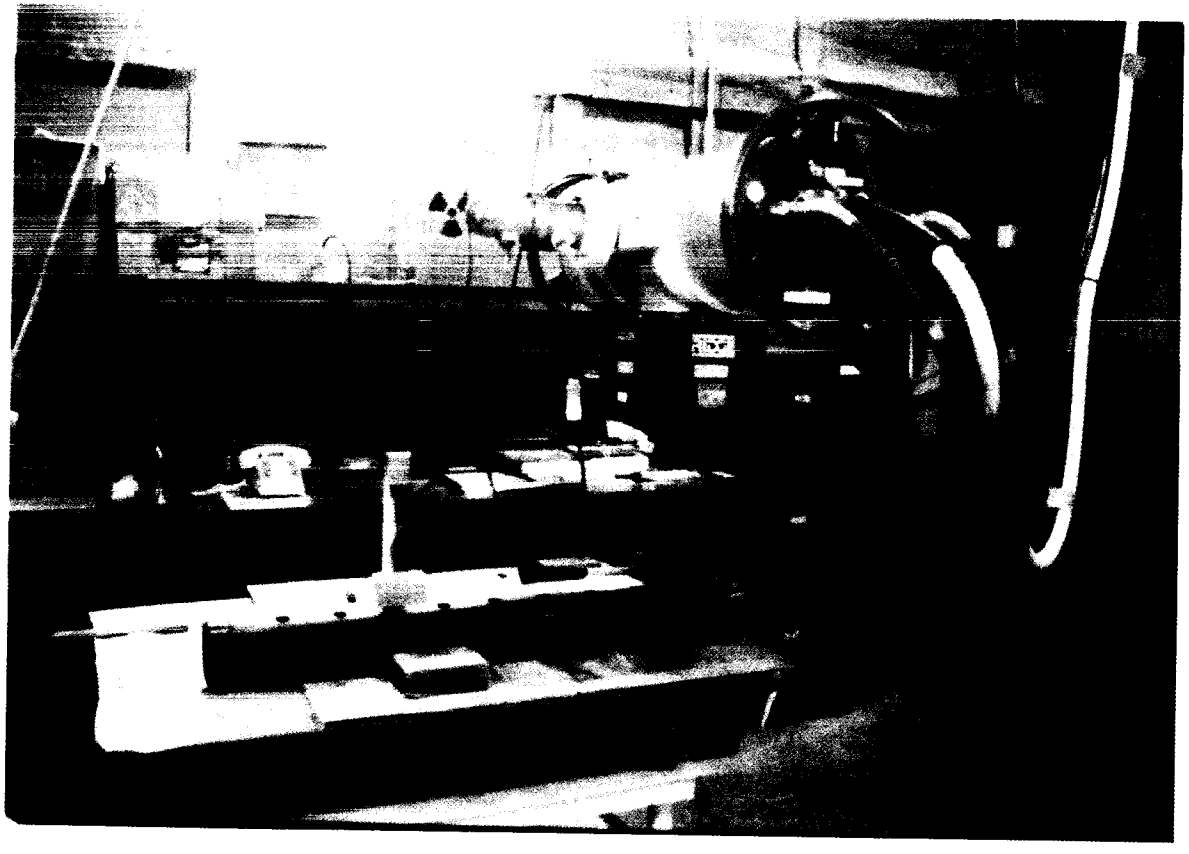


Anniston's small arms rebuild facility, the only one found within the Department of the Army, includes metal finish, cleaning, and painting capabilities. Indoor capabilities include function firing and target and accuracy firing complete with enclosed firing lane and computer targeting system. An outdoor firing range is capable of test firing weapons up to 40mm.

Function Firing Range

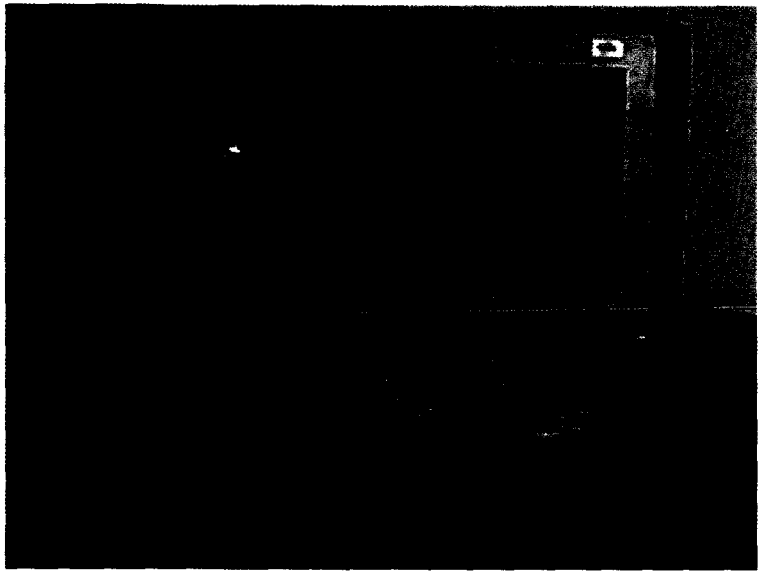
Anniston is equipped with an outdoor range (300' wide x 1,200' long with a 3,600' safety fan) for small arms, recoilless rifles, tank gun and artillery testing. The range supports function firing and targeting accuracy testing of small arms up to 50 caliber and a 40mm grenade launcher. Tank and artillery firing capability includes all main guns up to 155mm gun on the M198 and M109A6 Paladin. The range also supports testing of the 106mm recoilless rifle.

X-Ray Facility



The x-ray facility is used for radiographic inspection of welded materials such as armor steel, welding certification test plates, castings, and welded plates for ballistic test. Numerous items of steel or aluminum can be tested simultaneously. Equipment includes a Phillips 420KV Constant Potential X-Ray Machine capable of penetrating up to 4 inches of steel or its equivalent, a KODAK Industrial Automatic Film Program, full dark room, viewing room, and lead lined exposure room.

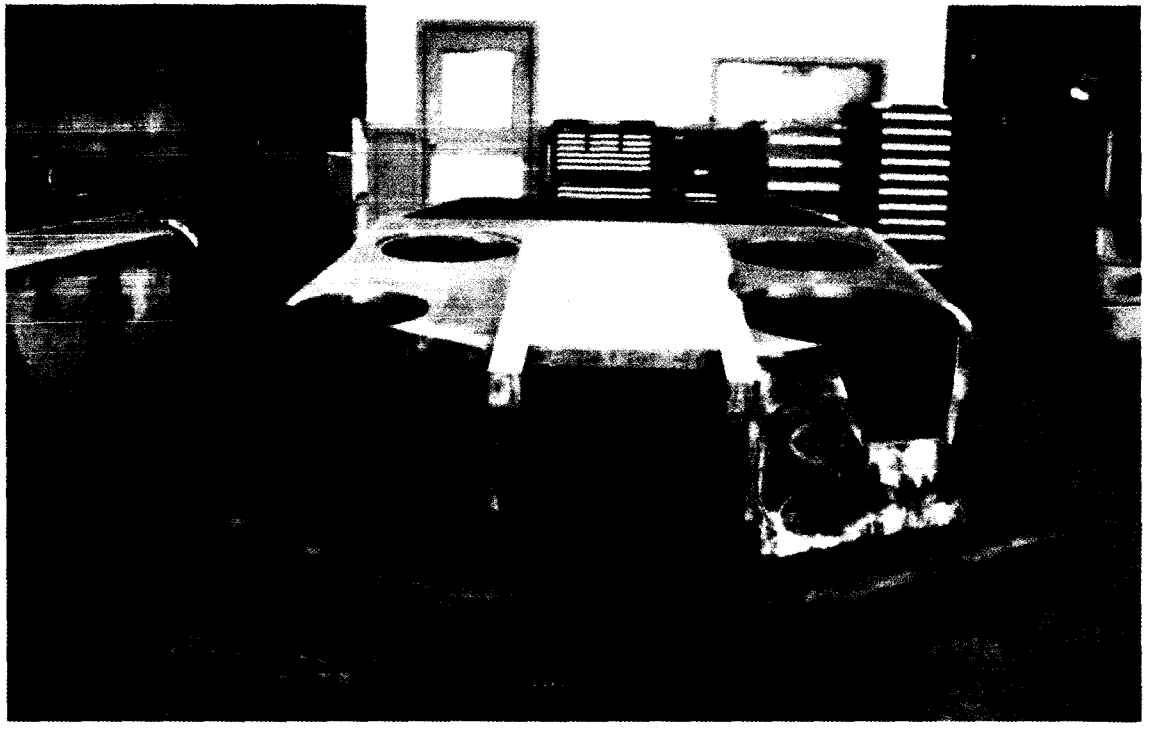
Flexible Computer Integrated Manufacturing Facility



Anniston's posture as a leader in the defense industry is most readily demonstrated by the recent induction of our computerized manufacturing center. Now on the leading edge of technology, our two high-tech manufacturing capabilities-FCIM and Rapid Acquisition of Manufactured Parts (RAMP)-serve as a model for defense related industry. FCIM-RAMP integrated, not simply connected, permits systematic utilization of state-of-the-market hardware, software, and communication.

FCIM RAMP forms an extremely responsive and powerful enterprise. It focuses on the "above-the-shop-floor" activities by integrating the engineering, production planning, tracking, monitoring, and fabrication functions through multi-layered computer architecture. It also allows Anniston to produce "difficult-to-procure" items, where lead-time is critical, and "one-of-a-kind", normally high cost items, at a reduction in price. FCIM RAMP provides Anniston Army Depot with the world-class capability necessary in a global marketplace where agile manufacturing is a prerequisite.

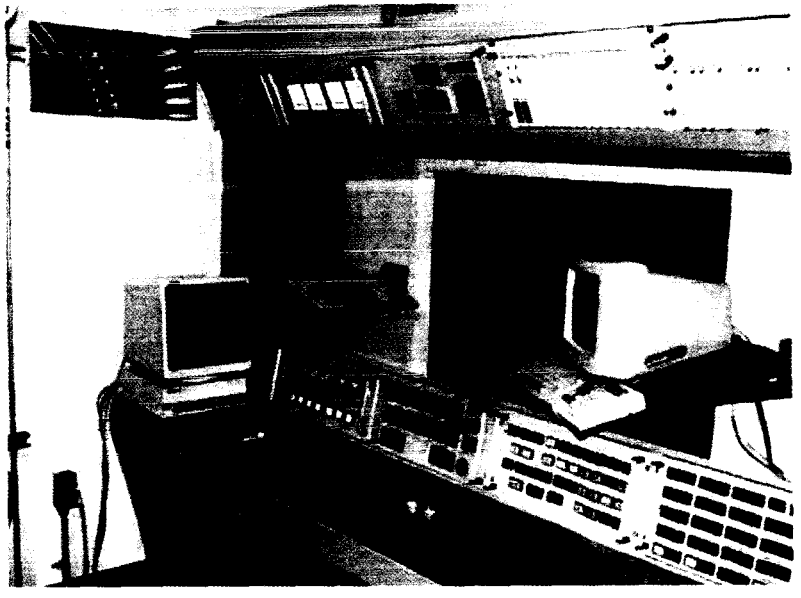
Rapid Vehicle Prototyping/Research & Development

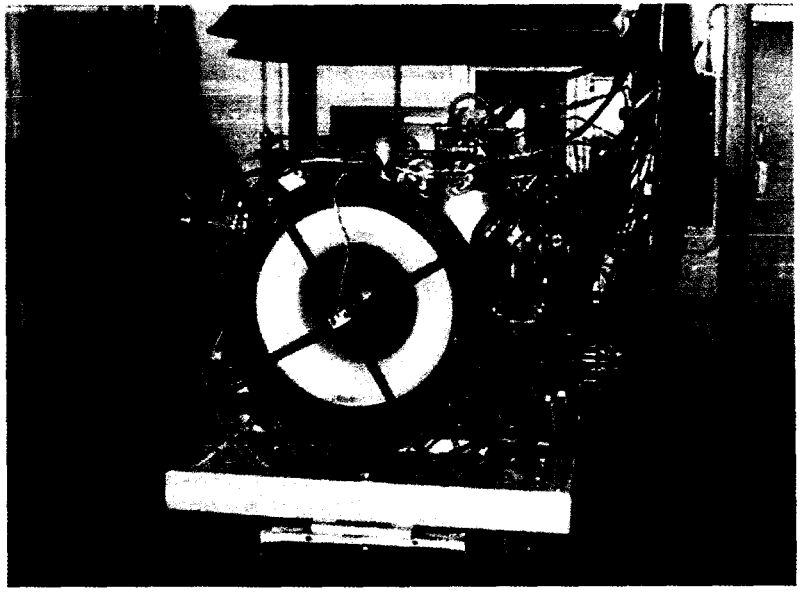


Anniston has provided unique support to R&D functions including design, prototype, fabrication, testing, and evaluation. In addition to the production shops, a 3396 sq. ft. facility is dedicated to the R&D welding process. Along with standard welding equipment, this facility has 2 each Track Mounted Robotic Welders and a Submerge-Arc Welder.

The M551 TTS/DNV, the Soviet Simulator, appliqué armor, roller mounting kits, Swedish demo vehicles, mine plow adapters, armor penetration devices, a prototype turret with automatic loader for a 120mm gun, Assault Breacher Vehicle, and combat vehicles are some of the R&D projects successfully supported by Anniston.

Computerized Engine Dynamometer Test Facility



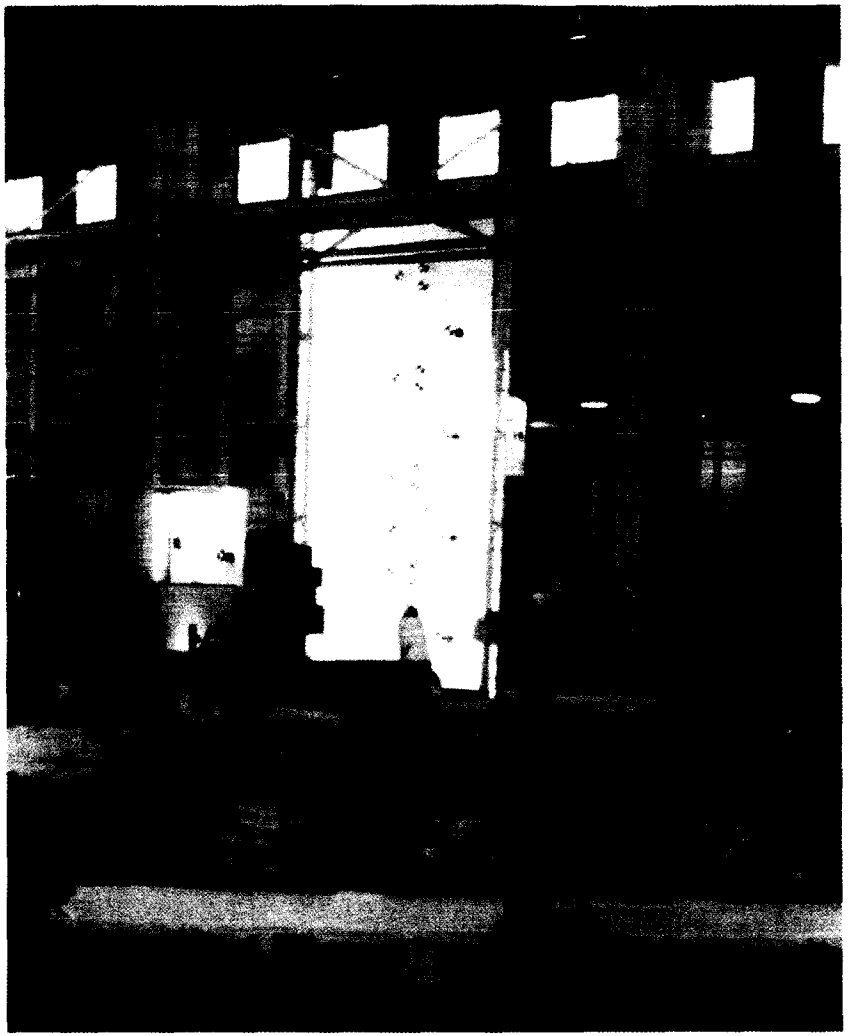


Computer controlled testing of both reciprocating and turbine engines is performed in Anniston's Dynamometer Test Facility. This facility is capable of testing engines up to 1,500 horsepower. Anniston is the only installation capable of overhauling and testing the AGT-1500 turbine engine of the M1A1 and M1A2 Abrams Tank.

Technical Publications

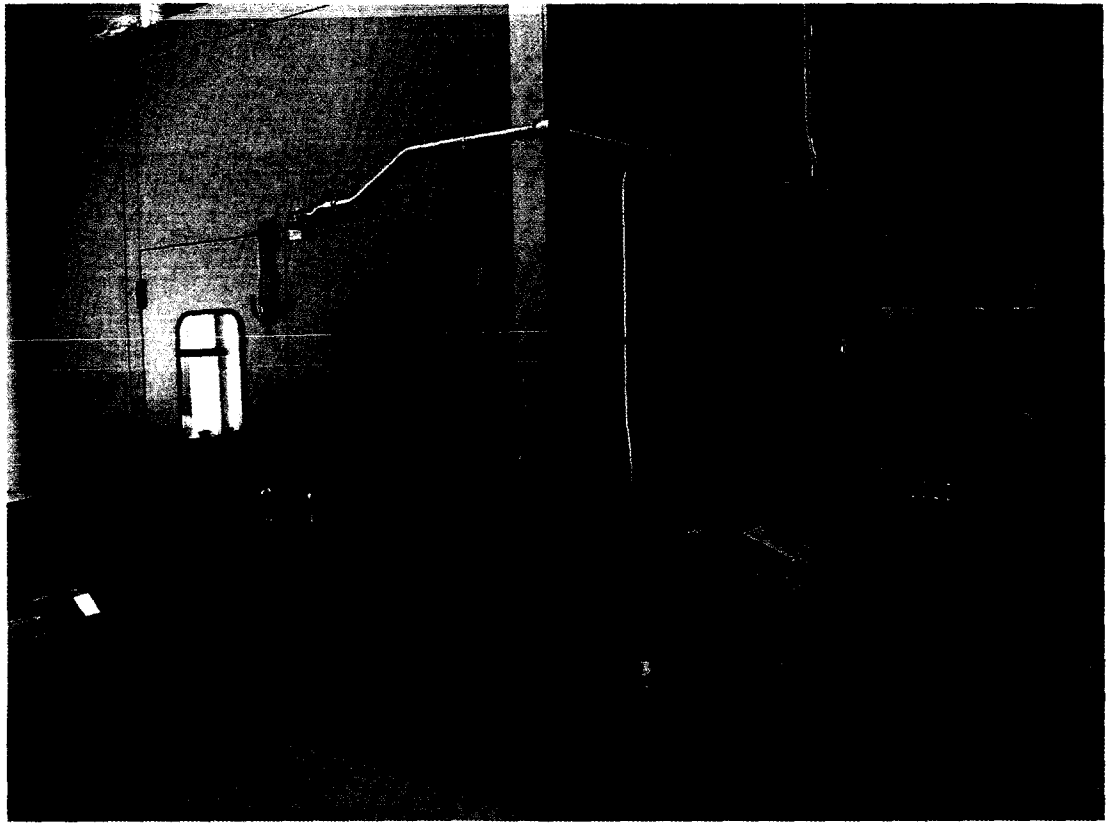
Since 1982, Anniston has successfully developed DMWR's, NMWR's, technical manuals, system maintenance manuals, technical bulletins, and depot manuals (Shop Instructions). Support equipment includes desktop publishing, laser printers, scanners, still digital photography, digital video capture and editing equipment, and electronic distribution capability.

M1A1 Turret Test Stand



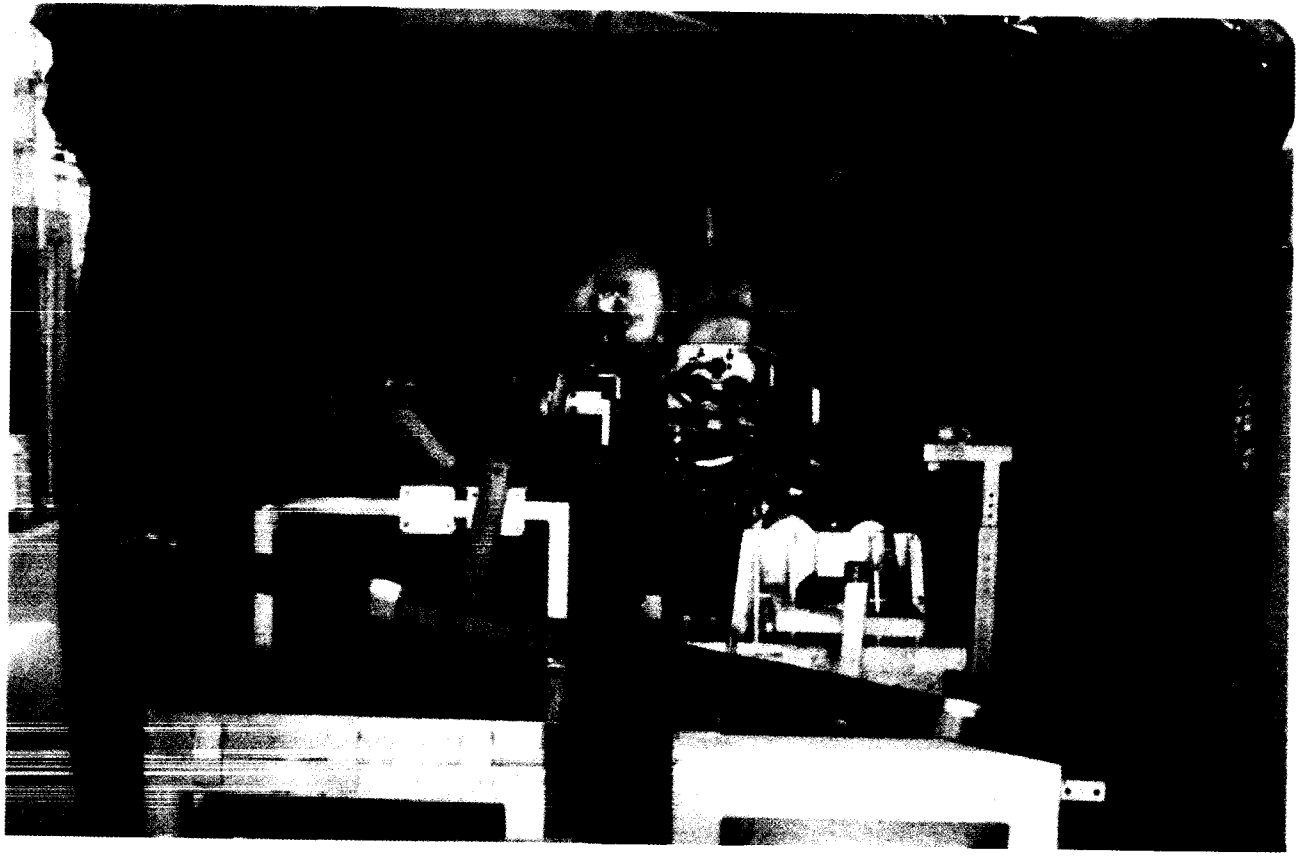
The M1A1 Turret Test Stand provides an electrical and hydraulic interface capable of simulating an M1 hull, which allows a complete electrical and hydraulic test to be performed. The TTS has a 30' target board with daylight and thermal targets for bore sighting the main gun and commander's weapon station. This target board simulates a 1200-meter target range. Turrets bore sighted on the TTS do not need to be bore-sighted again after they are mated with the hull. The TTS is also equipped with optical and thermal collimators for testing and aligning the Gunner's Primary Sight (GPS). A computer solution grid board performs computer solution tests of the turret.

High Velocity Oxygen Fuel System (HVOF)



The HVOF System provides a thermal spray coating to replace hard face chrome on various component parts. The HVOF System utilizes (nickel/chrome or tungsten/carbide/cobalt) type thermal spray coatings for replacement of conventional chrome plate. It is designed to produce a coating with bond strengths greater than 12,000 psi with a minimum hardness value of HRC 62. The system is semi-automated consisting of an articulated two-axis manipulator and is controlled from a control console that is located outside the spray enclosure. The manipulator is programmable from a keyboard.

Gun Tube Magnetic Particle Inspection System

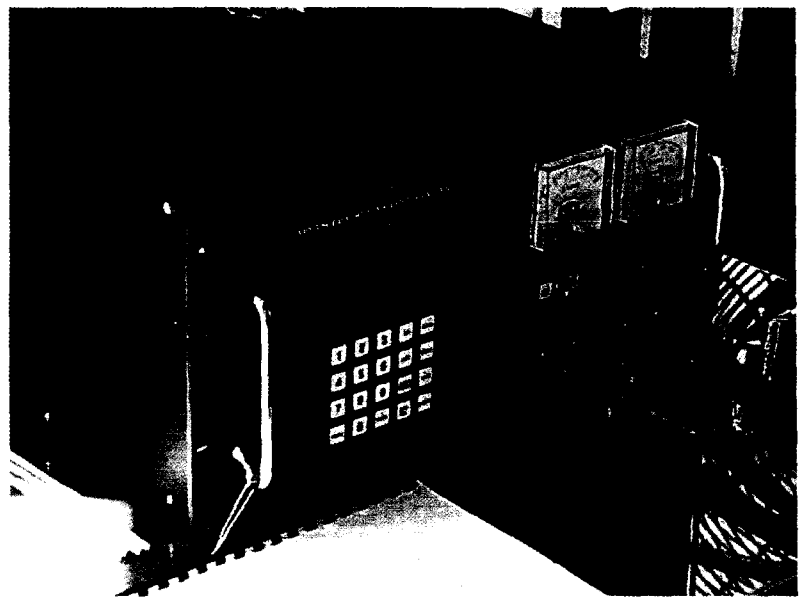


The wet horizontal magnetic particle inspection system is capable of performing non-destructive magnetic particle inspections on gun tubes up to and including the 120mm gun tube. Shrinking defense funds will make it necessary to use gun tubes for longer periods of time prior to replacement. This equipment plays a vital role in determining the serviceability of these gun tubes.

CNC 5-Axis Horizontal Machining Center

The horizontal machining center is equipped with a fully programmable rotary and tilting table. It is also equipped with a dual 59" (1500mm) square pallet loading system and in-process gauging system. The table will tilt from a horizontal position of 90 degrees to a vertical position of 270 degrees. The 5 axes are capable of full simultaneous motion under CNC control. This machine eliminates additional required set-ups due to its capacity to position the work-piece to any position in reference to spindle.

Electro-Spark Deposition (ESD)



ESD process is a capacitor discharge, micro-arc welding process that utilizes short duration electrical pulses, discharged at controlled energy levels, to create a metallurgically bonded surface modification. Typical uses are deposition of engineered electrode materials for surface-wear improvement, to create corrosion barrier, or changing the friction characteristic coefficient of a material surface. It is also used to repair surface defects that are not weldable using conventional methods. Recently, a number of very expensive M1A1 Abrams cannon cradles were repaired using this process. Without this process, all these cradles would have been scrapped.

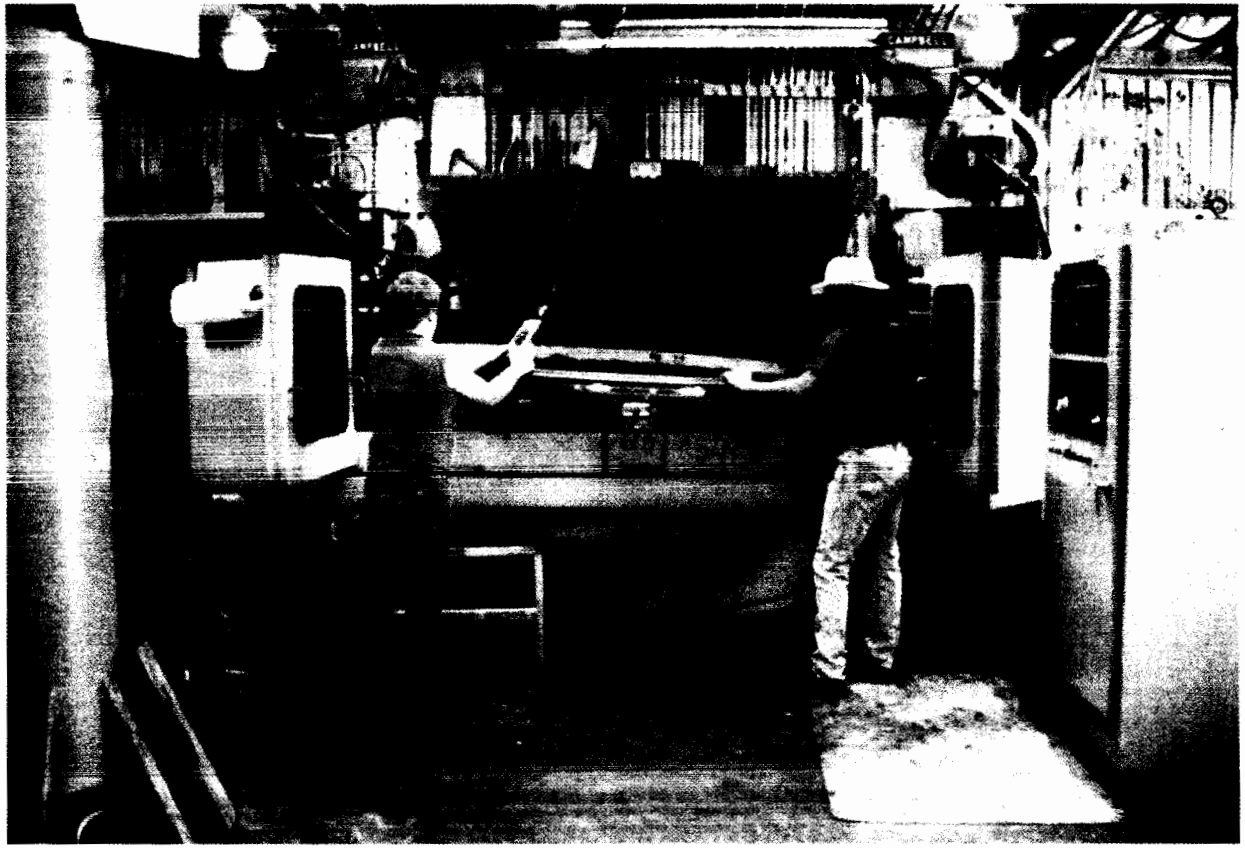
TMDE Support Center

The TMDE Support Center, Secondary Reference Lab, and Physical Standards Lab are located at Anniston. The Primary Standards Lab is located at Redstone Arsenal in Huntsville, Alabama (two hours from Anniston).

ANAD's in-place calibration team has extensive knowledge of calibration procedures for equipment used to test tracked and wheeled vehicles and components. All other TSO's in our mission area must send equipment to the Anniston Secondary Reference Lab. This allows for a faster turn-around time for equipment since the work is done "in-house".

The Secondary Nucleonics Lab located at Anniston calibrates and repairs radiation-detecting equipment. This capability is used to maintain equipment for depleted uranium armor used in M1A1 turrets.

CNC Race Ring Grinder



A vertical four-axis machine capable of both inner and outer diameter grinding up to 110" by 18". This machine has both linear and contouring capabilities. It is primarily used for machine grinding of all bearing surfaces on combat vehicle race rings. The grinder is located on an isolated foundation to assure grinding accuracy.

Materials Engineering Lab

The professional staff of the Materials Engineering Lab at Anniston performs a vast array of specialized tests and analyses using state-of-the-art equipment and certified industry processes such as Material Microscopy, Scanning Electron Microscopy, Composition Testing, and Mechanical Testing. The multifaceted laboratory and personnel provide Anniston with the capability to conduct the full spectrum of testing necessary to maintain quality control; troubleshoot our varied manufacturing processes; perform failure analysis; and to develop reclamation procedures for high cost components. The state-of-the-art equipment used includes:

- Energy Dispersive X-Ray Analyzer
- X-Ray Fluorescence Spectrometer
- Optical Emission Spectrometer
- Scanning Electron Microscope
- Stereo Microscopes
- Metallographic Equipment
- Profilometers
- Carbon Determinator
- Hardness Testers
- Photography
- Charpy Impact Tester
- Ultrasonic Inspection Equipment
- Universal Tester (tension and compression)
- Coating Thickness Gauging
- X-Ray Dot Mapping

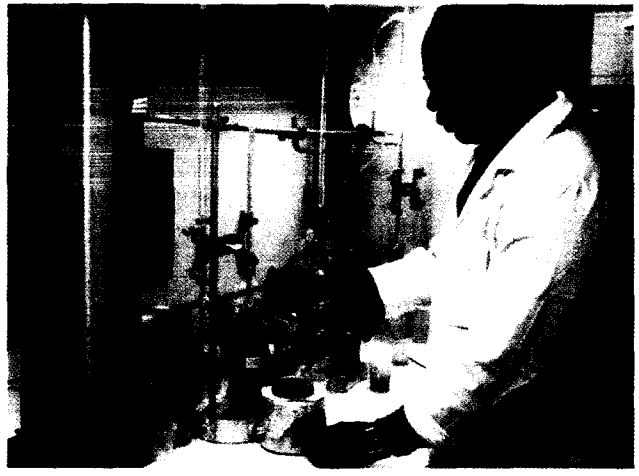
Chemical Lab

Anniston's Chemical Laboratory routinely meets the challenge of changing technology by providing laboratory analyses on all current manufacturing processes. The Chemical Lab is capable of accomplishing sophisticated chemical testing and consulting services in support of a wide range of industrial processes. Capabilities include physical, chemical, and functional testing of paints, plating and coatings, as well as a host of other industrial processes, such as mechanical and chemical cleaning.

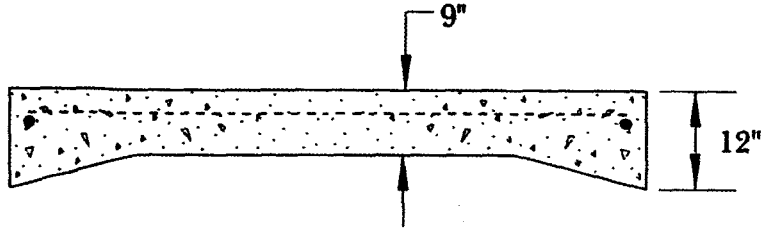
Of particular interest is Anniston's Oil Analysis capability, which allows us to accomplish petroleum sampling on virtually any vehicle or equipment. Our Chemical Lab is recognized DOD-wide through our Joint Oil Analysis Program Certification.

Chemical Laboratory equipment includes:

- Optical Emission Spectrometer
- Automatic Particle Counter
- Karl Fischer Coulometer
- Flash Point Testers
- Sieve Testers
- Viscometers
- Salt Spray Chamber
- Total Halide Analyzer



SPECIAL CONCRETE PAVEMENT DESIGN



★ PAVEMENT DESIGNED TO ACCOMMODATE HEAVY INDUSTRIAL OPERATIONS INCLUDING:

- TURNING ACTIONS OF 60+ TON VEHICLES.
- HEAVY POINT LOADING OF VARIOUS TYPES OF TRANSPORT DOLLIES AND BUGGIES

★ ANNISTON ARMY DEPOT HAS OVER 300,000 S.Y. OF THIS SPECIAL TYPE CONCRETE PAVEMENT AT A REPLACEMENT COST OF APPROXIMATELY 6.8 MILLION DOLLARS.

★ ANNISTON ARMY DEPOT'S ROADWAYS ARE IN GOOD CONDITION. MAINTENANCE AND REPAIR PROCEDURES AND PROJECTS ARE WELL PLANNED AND COORDINATED. ENGINEERING AND FINANCIAL RESOURCES ARE SUFFICIENT AND AVAILABLE IN-HOUSE.

★ ROADWAY NETWORK WILL SUPPORT ANY TYPE OF INDUSTRIAL OPERATION FROM HEAVY TO LIGHT.

POINT PAPER

AMSTA-AN-DPE 08 April 2004

SUBJECT: Surge

PURPOSE: Provide Information on Surge

FACTS:

o Surge is defined as a significant increase in workload (i.e. greater than 85% of existing plant capacity on a normal 40 hour 1/8/5 shift) with minimal warning or preparations.

o Response to surge depends on whether it is considered short (3-6 months) or long (6 months +) term.

o Short-term surge can normally be accommodated by overtime. At ANAD, we staff to support normal workload using 10-15 % overtime (OT). Expansion from a single shift (40 hr) workweek to twelve-hour shifts (1/12/7 or 84 hrs/wk) results in a 110% increase in available hours. Subtracting the originally planned 15% OT leaves a 95% increase in available hours or the ability to almost double production for short-term surge.

o If it becomes apparent the length of surge is transitioning from a short to long-term requirement, ANAD begins to use partnering agreements with defense industrial partners, local contracts, or cross-leveling support with other GSIE installations.

o As surge extends into a long-term requirement, hiring additional personnel becomes the next available option. Normally service contractors and temporary Government employment are the first choice to minimize adverse personnel impacts as the surge ends. Because of the time it takes to pre-position workload assets and parts for the longer-term surge, there is usually ample time to hire the additional workers necessary to accommodate the surging workload.

STRATEGIC OBJECTIVES:

o Provide surge capability second to none in support of the Warfighter.

o Minimize costs associated with maintaining surge capability/capacity by seeking above core workload and partnering initiatives with private industry.

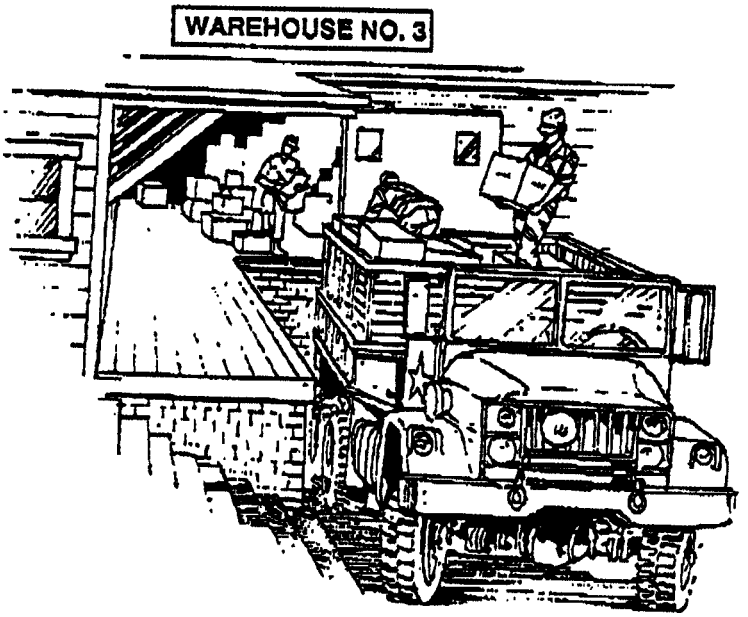
SUMMATION:

o An example of ANAD's flexibility in surge situations is demonstrated in the Stryker program. ANAD and General Dynamics employees performed assembly operations on the same assembly line (facility contract) from Sep 01 until Jan 04. Due to ANAD's increased organic workload, ANAD's employees were moved back into normal production areas in Jan 04. ANAD and GD continue to have a partnership contract wherein ANAD performs final paint operation on the Stryker.

o Surge capability at ANAD is enhanced due to the diverse workforce skills available for full spectrum support for virtually every light and heavy tracked weapon system.

o Logistics power projection is also included in surge capabilities. Depot employees can be deployed on short-term notice with toolbox in-hand to almost any worldwide destination to include forward locations in direct support to the Warfigher.

Examples of Crises Response



Date	***Response***
1967	***During the 6-Day War:***
	- Delivered 200 tanks accompanied by mechanics to Israel.
1973	***During the Yom Kipper War:***
	- 9JJ – 200 tanks prepared and delivered within 60 days.
In one 12-month period	
1983	***Designed and built 2 hard-target bonnets for m551 in 28 days.***
1983	***Prepared 68 m48A5 tanks for Lebanon in 30 days.***

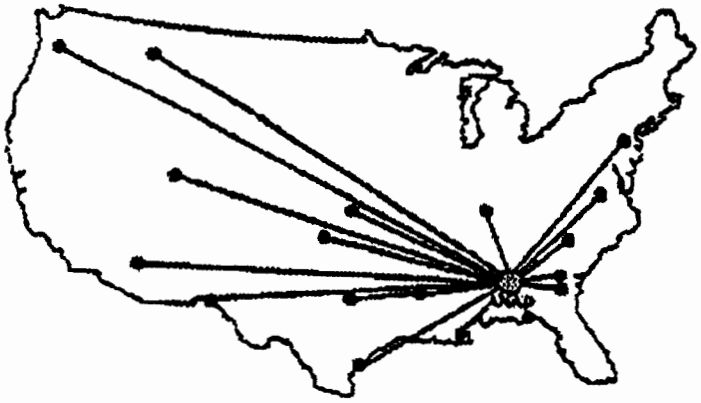
Examples of Crises Response – Continued

17-23 Nov 1983	*During Island Breeze:* - *Responded to 264 Material Release Orders (MROs) for weapons, ammo and vehicles.*
25 Oct – 2 Nov 1983	*During Urgent Fury:* - *Established a 24-hour operations center.* - *Shipped 104 requisistions.* - *Shipped 15 truckloads of contingency stocks after duty hours within 24-hours of notification.*
12-month example ends...	
1989	*During Operation Just Cause (Panama):* - *Shipped contingency stocks to Ft. Benning, Ga.* - *Shipped 198 tons of other materiel to Ft. Bragg, Ft. Stewart, and Panama.*

OPERATION DESERT SHIELD/STORM

Pre-Deployment

EQUIPMENT READINESS AND SYSTEMS TRAINING



217 ANAD Systems Specialists dispatched throughout the United States from August – December 1990.

OPERATION DESERT SHIELD/STORM

Deployment

➤ **476 ANNISTON EMPLOYEES –**

- VEHICLES

  - *Of the 1,332 civilians deployed, 36% were from ANAD.*

  - *<u>90%</u> of the <u>combat vehicle maintenance</u> mission was done by ANAD employees in country.*

- ANAD MINI DEPOT

  - *M1A1 MODIFICATIONS*

    - *Armor Package*
    - *Optical Improvements*
    - *Survivability Improvements*
    - *CARC Painting Equipment*
    - *1243 Total Vehicles*

- INTER-SERVICE SUPPORT

  - *INSTALLED APPLIQUE ARMOR ON 75 USMC M60A1 TANKS*

- FORWARD SUPPORT

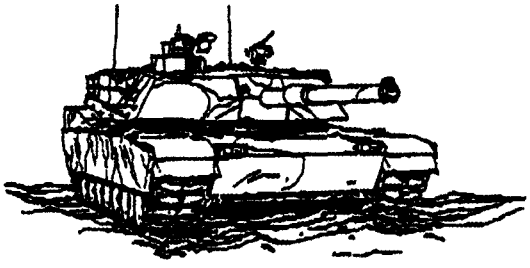
  - *DESCOMUSA Support Group*
  - *Maintenance /Supply*
  - *Field Support of Armored Vehicles*

- NEW PRODUCTION HAND-OFF

  - *M1A1 Tanks for USMC*

OPERATION DESERT SHIELD/STORM

Reconstitution



At the conclusion of Desert Storm, the heavy-tracked combat vehicle fleet in SWA was evaluated to determine the degree of repair necessary to ensure readiness was not comprised. Listed here is a recap of quantities and series of vehicles and series of vehicles workloaded at ANAD.

As of 6 June 95:

SERIES	*QUANTITY*
1PM1	*236*
M1A1	*365*
M1	*300*
M728 CEV	*46*
M88A1	*371*
AVLB	*70*
Total Vehicles	***1,388***

Pre-Deployment/Deployment Since ODS

HUMANITARIAN RELIEF

Personnel	*Dates*	*Purpose*	*Pre/Deploy*
7	*Aug – Nov 92*	*Hurricane Andrew South Florida*	*Deploy*

SMOALIA

Personnel	*Dates*	*Purpose*	*Pre/Deploy*
1	*9 – 23 Mar 94*	*Repair Radios*	*Deploy*

RWANDA

Personnel	*Dates*	*Purpose*	*Pre/Deploy*
1	*July 94*	*Quality Assurance*	*Deploy*
7	*July 94*	*(Standby)*	*Pre*

Pre-Deployment/Deployment Since ODS - Continued

CARIBBEAN BASIN – USS EISENHOWER

Personnel	Dates	Purpose	Pre/Deploy
2	13 –28 Sep 94	Logistical Assistance	Deploy

SOUTHWEST ASIA

Personnel	Dates	Purpose	Pre/Deploy
5	July – Sep 95	Repair LCSS	Deploy
2	17 Oct – 6 Nov 94	Quality Assurance Team	Pre
29	11 Oct – 2 Dec 94	Repair Vehicles	Deloy

HAITI

Personnel	Dates	Purpose	Pre/Deploy
1	7-14 Feb 95	Vehicle Painting Assessment	Pre
4	21 Feb – 31 Mar 95	Paint Vehicles for U.N.	Deploy
21		(Standby)	
1	Apr – May 95	Contracting Officer	Deploy

SOMALIA

Personnel	Dates	Purpose	Pre/Deploy
3	1 - 7 Feb 95	Load and Accompany Tanks	Deploy

OPERATION DETERMINED EFFORT

Personnel	Dates	Purpose	Pre/Deploy
10	Currently	(Standby)	Pre

SUMMARY OF GO-TO-WAR EFFORTS

ANAD Capability. In the Oct/Nov 02 timeframe, ANAD planners, workloaders, programmers, identified the surge capability of a variety of programs identified by the command. ANAD immediately began ramp up of turbine engine production. This was expanded to include other subassembly type items and NBC (nuclear, biological, and chemical) items. A weekly report was developed to track progress for this effort.

Fielding Support. ANAD deployed personnel to Ft Riley in Nov 02 to repair NBC items for the M1 Family of Vehicles.

Deployment Preparation. ANAD began preparation for deployment in Nov 02. Team members conducted evaluation of MILVANS for transporting items to support OCONUS deployment of ANAD personnel. MILVANS were packed and prepared for shipment.

Bridge Repair. ANAD received Commander Commencement Orders, priority 02, for 10/20 repairs of the Standard Ribbon Bridge (SRB). The requirement came as the Directorate for Production was preparing to shut down for the week of Christmas so that the Directorate for Public Works could perform maintenance on production equipment. The effort was for 96 ea. interior and 8 ea. ramp bays as well as 3 ea. supplemental sets. We had not worked any of these items previously. We ramped up to two 12 hour shifts and worked every day during the Christmas shutdown except Christmas Eve and Christmas Day. The ramp and interior bays were completed in a just seven days. The supplemental set was inventoried and reclaimable items worked in 8 days. Parts available through the supply system were ordered priority shipment. Market research was performed and the remaining items or acceptable substitutes were ordered. The longest lead time item should arrive by 10 Jan 03 to complete the entire effort. Several different Directorates and the Defense Distribution Activity Anniston worked together to accomplish most of this mission in record time. It was a remarkable achievement for team ANAD.

Cost Estimates. ANAD provided cost estimates in Nov 02 for the following items to support Go to War Requirements: MLC 60/70 ton bridge upgrade, standard ribbon bridge, and medium girder bridge.

Acceleration of Production Schedules. ANAD received a request from TACOM Rock Island on 22 Jan 03 to accelerate depot production on the following PCNs/PRONs:

- Gyro assembly - Qty of 230 completed by end of Mar 03
- Interconnecting box - Qty of 200 completed by end of Feb 03
- Circuit Card Assembly - Qty of 50 completed by end of Mar 03
- Circuit Card Assembly - Qty of 100 completed by end of Mar 03
- Commander's Sight Extension - Qty of 40 completed by end of Mar 03
- Servo Mechanism - Qty of 95 completed by end of Mar 03
- Servo Valve - Qty of 66, completed by end of Mar 03
- Race Ring - Qty of 6 completed by end of Mar 03
- Slip Ring - Qty of 13, completed by end of Mar 03

SUMMARY OF GO-TO-WAR EFFORTS

- Slip Ring - Qty of 15, completed by end of Mar 03
- Slip Ring - Qty of 15, completed by end of Mar 03
- Tank Periscope Test - Qty of 31 completed by end of Mar 03
- Testing of Electronic Components - Qty of 30 completed by end of Feb 03
- Testing of Electronic Components - Qty of 30 completed by end of Mar 03

ANAD Deployments. Four employees were deployed to the Netherlands Feb 03 for a period of 30 days to support M1A1 mission requirements. Three employees were also deployed to Germany to inspect 45 M1A1 Vehicles prior to vehicles being turned in. Two employees were deployed to Ft. Benning, Ga. to begin overseas processing.

Cost Estimates. ANAD provided a cost estimate to TACOM for the overhaul of 16 ea. USMC M1A1 vehicles in Feb 03. A maintenance PRON was established with a priority code 02. ANAD provided a cost estimate to TACOM for the overhaul of 60 ea. NBC Air Temp Controllers. A maintenance PRON was established with a priority code 02.

Shipments. ANAD Shipped parts for 32 end items in support of the Southwest Asia PUSH PACKET. Items were shipped federal express with an EDD of 2 Mar 03.

Cost Estimates. TACOM Rock Island requested a cost estimate for disassembly of 45 Paladins, NSN 2350-01-305-0028. ANAD provided a rough order of magnitude (ROM) estimate to support this go to war disassembly effort.

Increased Surge /Accelerated Production. Three 6V53 Engine Programs were increased at the 1st Qtr In-Process Review increasing the total quantity of engines from 347 to 776 for an increase of approximately 45K manhours to support Go to War requirements. This number is expected to increase to as high as 1179 total engines.

SURGE Production. ANAD received multiple PRONS to support Go to War efforts in the Small Arms arena and began surge production in March. Initial surge is on the M16A2 Rifles.

ANAD Deployments. Anniston Army Depot presently has 20 employees deployed in Kuwait in support of Operation Iraqi Freedom. These individuals are deployed for a period of up to 179 consecutive days to repair secondary items such as engines, transmissions, final drives, Generators, etc. in support of this mission. These individuals also possess the skills necessary to make needed repairs on combat vehicles such as the M1A1, M88A1, M9 Armored Combat Earthmover (ACE), M60 AVLB (Armored Vehicle Launched Bridge), and M113 Family of Vehicles. We presently have 21 additional personnel who have processed through the CONUS Replacement Center at Ft. Benning, Ga. and are prepared for immediate deployment overseas if mission requirement warrant this action.

AFGHANISTAN: No efforts on-going at present.

From the FY97 Historical Report

- Transferred and installed over 100 pieces of Depot Maintenance Plant Equipment (DMPE) from Red River Army Depot (RRAD) and Letterkenny Army Depot (LEAD) in support of BRAC 95 mission transfers.

- Completed pilot overhauls for BRAC missions on the M113FOV, TX-100 transmission and the M198 howitzer.

- Successfully transferred the entire M113FOB and M9 ACE workload from RRAD and the Towed Artillery workload from LEAD.

- Completed 5 Facility Engineering Projects (FEP) at ANAD to support the BRAC95 artillery move from LEAD. These projects included the Transmission Dynamometer Facility, the Machining Facility, the Firing Range Upgrade, the Recoil Expansion, and the Recoil Honing Facility

From the FY98 Historical Summary

- Transferred and installed 16 pieces of equipment from RRAD and LEAD under BRAC95 auspices.

- Completed pilot overhauls for the X200-4 transmission and the 6V53T Silver engine for the M113A3 fleet of vehicles.

- FY98 saw the completion of the BRAC95 transition from RRAD. During FY98, the M113FOB and the M9ACE mission transfers were completed. This included transferring the remaining support from RRAD and performing pilot overhauls on the M9ACE vehicle.

- Began transferring self-propelled howitzer equipment from LEAD to support the M109 FOV mission transfer. The remaining towed artillery equipment from LEAD was also moved.

- Completed the M198 towed howitzer pilot overhaul and started pilot overhauls for the major subassemblies on the M109 self-propelled howitzer.

Equipment Moved	8 (RRAD)	210 (LEAD)
Tools/Fixtures Moved	75	317
Personnel Trained	11	17
Pilot Overhauls	3	6

From the FY99 Historical Summary

- Two hundred sixty six (266) pieces of property book equipment were moved from LEAD as well as 385 special tools and/or fixtures.

- Total number of M113 vehicles produced was 441; total M9 ACE vehicles produced was 33.

ANNISTON ARMY DEPOT
SUPPORTING OUR WAR FIGHTER

Quotes from General Richard B. Myers, Chairman of the Joint Chiefs of Staff, in a written posture statement to the Senate Armed Services Committee and the House Armed Services Committee on February 16 and 17, 2005: "High operational and training tempo is putting up to 5 years worth of wear on equipment per year, placing a huge demand on maintenance, supply, depot repair and production. In some units, combat-related damage is high, and there is substantial equipment damage caused by the harsh environment in Iraq and Afghanistan. Additionally, many units leave their equipment overseas when they return from deployment, requiring re-supply and reconstitution as they train for their next deployment." "The DOD depends on the skills and expertise of its civilian workforce as a force multiplier. We simply could not perform our mission without the support, dedication, and sacrifice of our DOD civilian employees at home and overseas."

Any decision that adversely affects Anniston Army Depot (ANAD) will have an immediate impact on our ability to support the war fighter. Anniston Army Depot maintains a skilled workforce of machinists, mechanics, welders, engineers, and electronic mechanics ready to deploy to any post, camp, or station at any time. These employees are proficient in the inspection and repair of multiple families of combat vehicles, electronic components, small arms and towed artillery carrying with them institutional knowledge not readily available from <u>one</u> source.

Go-to-War Efforts for Operation Iraqi Freedom/ Operation Enduring Freedom

In the Oct/Nov 02 timeframe, ANAD planners, workloaders, programmers, identified the surge capability for a variety of programs identified by higher command. ANAD immediately began ramp up of M1 Main Battle Tank turbine engine production. This was expanded to include other subassemblies and NBC (Nuclear, Biological, and Chemical) items. ANAD deployed Fielding Support personnel to Ft. Riley in Nov 02 to repair NBC components on M1 Tanks located there. ANAD also began preparation for OCONUS deployment in Nov 02. Team members conducted evaluations of MILVANS for transporting items in support of ANAD personnel deployment. MILVANS were packed and prepared for shipment.

ANAD received a Commander Commencement Order, priority 02, for 10/20 repairs of Standard Ribbon Bridges (SRBs). The requirement came as the Directorate for Production was preparing to shut down for the week of Christmas so that the Directorate for Public Works could perform maintenance on production equipment. The effort was for 96 ea. interior and 8 ea. ramp bays as well as 3 ea. supplemental sets. ANAD had not worked any of these items previously. ANAD ramped up to two 12-hour shifts and worked every day during the Christmas shutdown except Christmas Eve and Christmas Day. The ramp and interior bays were completed in a just seven days. The supplemental set was inventoried and reclaimable items worked in 8 days. Parts available through the supply system were ordered priority shipment. Market research was performed and the

remaining items or acceptable substitutes were ordered. Several different Directorates and the Defense Distribution Depot Anniston (Defense Logistics Agency) worked together to accomplish most of this mission in record time. It was a remarkable achievement for team ANAD.

ANAD received a request from TACOM Rock Island on 22 Jan 03 to accelerate depot production on the following PCNs/PRONs:

- Gyro assembly - Qty of 230 completed by end of Mar 03
- Interconnecting box - Qty of 200 completed by end of Feb 03
- Circuit Card Assembly - Qty of 50 completed by end of Mar 03
- Circuit Card Assembly - Qty of 100 completed by end of Mar 03
- Commander's Sight Extension - Qty of 40 completed by end of Mar 03
- Servo Mechanism - Qty of 95 completed by end of Mar 03
- Servo Valve - Qty of 66, completed by end of Mar 03
- Race Ring - Qty of 6 completed by end of Mar 03
- Slip Ring - Qty of 13, completed by end of Mar 03
- Slip Ring - Qty of 15, completed by end of Mar 03
- Slip Ring - Qty of 15, completed by end of Mar 03
- Tank Periscope Test - Qty of 31 completed by end of Mar 03
- Testing of Electronic Components - Qty of 30 completed by end of Feb 03
- Testing of Electronic Components - Qty of 30 completed by end of Mar 03

ANAD also shipped parts for 32 end items in support of the Southwest Asia PUSH PACKET. Items were shipped federal express with an EDD of 2 Mar 03. Three 6V53 Engine Programs were increased at the 1st Qtr In-Process Review increasing the total quantity of engines from 347 to 776 for an increase of approximately 45K man-hours in support of Go-to-War requirements.

SURGE Production. ANAD received multiple PRONS to support Go-to-War efforts in the Small Arms arena and began surge production in March. Initial surge was on M16A2 Rifles.

Dedication to supporting our soldiers is evidenced by the fact that we have deployed in excess of 250 employees in support of Operation Iraqi Freedom and Operation Enduring Freedom. Anniston Army Depots employee's began this phase of deployment in Jan 2003 and continues to support missions in Southwest Asia. Any decision adversely affecting ANAD would compromise the Army's ability to deploy skilled artisans quickly.

Anniston was recently tasked to provide up to 45 turret mechanics to Kuwait working along with contractor personnel to ensure M1A1 vehicles were ready for deployment in fully mission capable condition. Upon notification of this mission, Anniston began making immediate plans to deploy employees. ANAD had employees in country within days. This level of commitment and resource would be lost should any decision be made that compromises Anniston's ability to support the mission.

Anniston Army Depot began deploying Department of the Army civilians in January 2003, to support Operation Iraqi Freedom. Our first mission was to deploy two employees to Camp Arifjan, Kuwait, to establish a Forward Repair Activity (FRA). These employees were tasked with establishing all logistical requirements including lodging, housing, clothing, etc. for ANAD employees. We deployed approximately 20 additional employees two weeks later to begin transformation of an empty warehouse into a Rebuild Facility. Within 45 days of arrival in country, we were making repairs to secondary items. Four employees were deployed to the Netherlands Feb 03 for a period of 30 days to support M1A1 mission requirements. Three employees were also deployed to Germany to inspect 45 M1A1 Vehicles prior to vehicles being turned in. We have maintained a cadre of approximately 22 employees since being at Camp Arifjan. These individuals also possess the skills necessary to make needed repairs on combat vehicles such as the M1A1, M88A1, M9 Armored Combat Earthmover (ACE), M60 AVLB (Armored Vehicle Launched Bridge), and M113 Family of Vehicles. Missions in Kuwait have ranged from Add-on-Armor, repair of 1790 engines, repair of other secondary items, and the inspection/categorization of assets to determine disposition.

Anniston deployed 10 employees to Camp Anaconda, Balad, Iraq, to staff the HMMWV Service Center for approximately 18 months. These employees performed numerous services in support of our soldiers in country. These included repairs of tires, application of Add-on Armor, changing oil in vehicles, changing transmissions, repairing brakes, etc.

During the past two years, Anniston Army Depot has deployed in excess of 350 employees to posts, camps, and stations in 34 states and 7 different countries. Our employees have been involved with supporting our war fighters in many different missions. Some of these include: Inspection/Repair of AVLB's; Inspection of M1A1's; Repair of Reverse Osmosis Water Purification Unit (ROWPU); Welding of Tracked Vehicles; Towed Artillery Repair; and Inspection/Repair of Small Arms. Our employees continue to support any mission requiring our support. We have the capability and have demonstrated our commitment to our War fighters by deploying employees to posts, camps, and stations, within hours when necessary.

Operation Desert Shield/Storm

In support of Operation Desert Shield/Storm 476 ANAD employees were deployed to support the war efforts in SWA, which accounted for 36 percent of all civilians deployed. ANAD employees in country performed ninety percent of all combat vehicle maintenance missions. ANAD employees formed "mini depots" in county to perform M1A1 Modifications on Armor packages, optical improvements, survivability improvements, and CARC painting of equipment. 1243 total vehicles were serviced. Support also included inter-service support. ANAD employees installed appliqué armor on 75 USMC M60A1 tanks. Forward support included DESCOMUSA support group, maintenance and supply, and field support of armored vehicles and new production hand-off of M1A1 tanks for the USMC.

At the conclusion of Desert Storm, the heavy-tracked combat vehicle fleet in SWA was evaluated to determine the degree of repair necessary ensuring uncompromised readiness. Listed below is a recap of quantities and series of vehicles work loaded at ANAD. Reconstitution as of June 95:

SERIES	QUANTITY
1PM1	236
M1A1	365
M1	300
M728 CEV	46
M88A1	371
AVLB	70
Total Vehicles	**1,388**

Information Paper
On
Transition of Combat Vehicle Missions (BRAC95)

Letterkenny Army Depot
to
Anniston Army Depot

INFORMATION PAPER

PURPOSE: To provide Information on BRAC 95 transition of Combat Vehicle Missions from Letterkenny Army Depot (LEAD) to Anniston Army Depot (ANAD).

FACTS:

1. Based on feedback during AMCOM's briefing to the TABS committee Dr. College asked for additional information to be provided. The specific request was "how long did it take Anniston Army Depot to become certified on the Paladin vehicle and what was the downtime associated with moving the mission from Letterkenny to Anniston"?

2. Letterkenny responded with the following information:

a. Transition of the mission began with the initial planning meetings in FY96, and ended with the completion of the Paladin Pilot Overhaul in FY00. A Transition Team was formed with 35 members from Letterkenny Army Depot, Anniston Army Depot, Tank Automotive Command, PM Paladin, HQ Defense Logistics Agency, Defense Distribution Region East, Defense Distribution Depot Letterkenny, Defense Distribution Depot Anniston, and the Industrial Operations Command. The Transition Plan was signed August 1998. SDS products were supplied to provide work center detail, parts consumption, and parts forecasting data. $5.4 was budgeted for the ANAD portion of the transition and $27.5M for the LEAD portion. Additionally, there were five Military Construction Projects for $724,000 completed at ANAD for receipt of the mission. The ANAD firing range was approved for howitzer firing in May 1996. The US Nuclear Regulatory License for storing self-luminous Tritium sources was not a factor since the Command and not individual depots held it. A total of six personnel transferred to ANAD. LEAD conducted a Reduction In Force and excess personnel were terminated.

b. Combat Vehicle Transition was broken into three major elements

1) Towed Artillery –

a. M120 Salute Howitzer
b. M10A1 105mm Light Towed Howitzer
c. M102 105mm Light Towed Howitzer
d. M114A2 155mm Medium Towed Howitzer
e. M198 155mm Medium Towed Howitzer
f. M2A5& M2A6 recoils for M101A1
g. M37A1 recoils for the M102
h. M45 recoils for the M-198

2) Self-Propelled vehicles

a. M109 155mm Medium Howitzer Family of Vehicles A2 through A5
b. M109A6 Paladin 155mm Medium Howitzer
c. M110 8" Heavy Howitzer
d. M578 Light Recovery Vehicle
e. M992 Field Artillery Ammunition Support Vehicle

3) Discretionary moves directed by Industrial Operations Command.

a. M12 Decontamination Units
b. M51 NBC Shelter Systems
c. M33 Riot Control Dispersers
d. M21 Smoke Generators
e. M90 RADAR Chronograph
f. M155 Mine Clearing Launcher
g. 25T Crane engines
h. M1A1 Collimator
i. M2A2 Aiming Circles
j. M3 Borescopes
k. Trailer mounted Lubrication Units
l. CH47 Sling Assemblies
m. CH47 Fire Extinguisher Repair

c. Towed Artillery and Other Production

1) Training on Towed Howitzers, Recoil mechanisms, and fire control optics was conducted January 1997. Training included disassembly, overhaul, rail grinding, chrome plating, assembly, and test. Additional training was provided on the new M119A1 Lightweight 105mm Gun, but LEAD had not performed a pilot overhaul due to a lack of candidate assets. ANAD would perform the Pilot Overhaul.

2) Upon completion of training, equipment began transition to ANAD. Equipment was shipped during 1997 and completed in August 1998. Due to the pending disestablishment of the Defense Distribution Depot Letterkenny (DLA), ANAD personnel assisted LEAD in the packing of equipment and ANAD arranged the transportation. FY 99 depot workload and the M119 Pilot Overhaul was scheduled and performed at ANAD. ANAD performed the Initial Reconditioning test on secondary items and end items. The M-198 Pilot Overhaul was started at ANAD in 1997 and completed in 1998. ANAD produced two assets #1199 and #1253. Problems were encountered over the use of Cadmium in the overhaul process. Cadmium plated hardware was required on M-198 assets IAW the Depot Maintenance Work Requirement. ANAD did not use Cadmium in their overhaul processes. Once a contractor was located to plate the hardware the overhaul process was approved. LEAD personnel assigned to the Towed Artillery workloads were moved to Self-propelled workloads.

No LEAD personnel transferred to ANAD during the Towed Artillery Transition. There was approximately 12 months downtime and there was significant cost increases to M198 overhaul programs.

d. Self-Propelled Artillery Production Coordination

1) Phase 1 consisted of older models of artillery systems and components. Training was conducted in March of 1998. Fire Control, Hydraulics, Engine, and Transmission training was included. Equipment began transferring immediately after training was completed. Only minimum equipment needed to complete the Paladin program was retained at LEAD. Secondary item overhaul including hydraulics, recoil, fire control optics, and electromechanical components for FY99 was performed by ANAD and ANAD performed the Initial Reconditioning test for the vehicles prior to receiving the FY00 workload for the end-items. **Six personnel transferred to ANAD.** Equipment for the discretionary moves transferred to ANAD.

2) Phase 2 consisted of the M109A6 Paladin and all the associated sub-systems. This phase was necessary because LEAD was involved in a partnership agreement for production of 950 vehicles ending 30 May 1999. That was the date for completion of the initial production contract. Training was provided in January 1999 in order to complete the action before LEAD employees were separated. Paladin equipment was incrementally shipped as LEAD production processes were completed. **No personnel transferred to ANAD.** A Reduction in Force was conducted at LEAD eliminating all excess employees. ANAD assumed any additional production contracts awarded to the partnership after May 99. **No funding was available for new production until FY02 when ANAD produced 7 additional assets in partnership with United Defense. LEAD did not perform overhaul of the M109A6 prior to transition to ANAD due to a lack of candidate assets. ANAD performed the Pilot Overhaul of an asset in FY00. No other candidate assets were available for overhaul until FY04. Downtime cannot be measured due to a lack of funding for Paladin production and lack of overhaul candidates.**

3. The following is Anniston's response to the LEAD information:

- **LEAD Assertion: No Lead personnel transferred to ANAD during the Towed Artillery Transition.**
  - **ANAD Response:** This is correct.
- **LEAD Assertion - There was approximately 12 months downtime during transition of the M198.**
  - **ANAD Response:** The M198 transition from LEAD to ANAD was designed to minimize downtime. Training and equipment transition to support the M198 pilot overhaul did not interfere with LEAD production capability, because (initially) excess equipment was transitioned/installed

at ANAD without impacting LEAD operations. Only after the M198 pilot overhaul was successfully completed and ANAD was fully mission capable, did the remainder of the towed equipment transfer and LEAD lose mission capability. There was even discussions of a joint production of M198s during the transition with ANAD producing the carriage assembly and either LEAD or Rock Island Arsenal producing the recoil mechanism. There was no time in the transition that the Army did not have the capability to support the M198. Capability to overhaul M198s existed at both Barstow and Rock Island Arsenal during the transfer of LEADs work to ANAD. Neither of these sources had to be used because of downtime during the transition.

- **LEAD Assertion: There was significant cost increases to M198 overhaul programs:**

  - **ANAD Response:** This statement is true because ANAD was instructed by TACOM-Rock Island (customer) to perform a more comprehensive (and costly) scope of work than LEAD had been performing.

    - Letterkenny Army Depot was allowed to perform Reliability Centered Maintenance (less than complete overhaul) within their scope of work and Depot Maintenance Work Requirement (DMWR).

    - ANAD was required to validate a new OVERHAUL DMWR and begin overhauling the M198s to this new standard vs. the Reliability Center Maintenance scope of work, which required additional effort, time and costs. Additionally, ANAD uncovered issues with components of the M198 Howitzer Fleet that had not been discovered by Letterkenny due to the scope of work being different. ANAD was also required to incorporate Modification Work Orders (not required of Letterkenny Army Depot) into the OVERHAUL of those initial weapons.

    - An overhaul procedure is by nature an extensive operation requiring additional workload not associated with a RCM. ANAD and TACOM Rock Island worked together as a team to resolve the issues and a funded PRON was input to cover the additional cost associated with the changes.

    - To date TACOM Rock Island acknowledges that ANAD is building a better, more reliable, M198 Howitzer, than previously received from Letterkenny Army Depot. This is due to ANAD performing complete disassemblies and overhaul, not RCM procedures.

Depot workers to aid in war effort

By Sara Clemence
Star Staff Writer
02-24-2003

James Wilbert stood straight and still as he watched his brother George board a blue bus at the Anniston Army Depot Sunday morning.

As thousands of others around the state know, it hurts the heart to send a loved one off to the Middle East for the first time. Or the second time. Or in this case, the third time.

"It don't get no easier," Wilbert said, "knowing they're going into a war zone."

There has not yet been a military action against Iraq. But this weekend nearly 20 civilian volunteers, depot workers expert at fixing and maintaining armed personnel carriers and tanks, departed for the Middle East, where they will help soldiers train and prepare for the war that may come.

An Anniston Army Depot civilian volunteer says goodbye to a family member before departing for Kuwait in support of Operation Enduring Freedom. Photo: Kevin Qualls/The Anniston Star

About half the volunteers, George Wilbert included, were deployed in Desert Shield or Desert Storm. Now, they are in the first Anniston contingent, chosen from an "overwhelming" list of volunteers, Army officials said, to participate in the current buildup.

"They're the backbone," said James Wilbert, a retired depot worker who was wounded in Vietnam and leans on a silver cane.

Army officials would not reveal where the workers were bound, but family members indicated the final destination.

One volunteer said he had al-ready checked "the weather in Kuwait."

Once they get there, the volunteers – for now, all men – will be paid $3 a day. They will eat and sleep with soldiers.

"Freedom isn't free," U.S. Rep. Mike Rogers said at Sunday's brief departure ceremony. "What we have here is very precious and needs to be protected."

Many families bade farewell in public. George "Key" Milner, like other volunteers, said goodbye at home, him with a dinner of Kentucky Fried Chicken.

"Something we may not have over there," Milner said.

Depot workers to aid in war effort - Continued

Among the things Milner planned to carry abroad were photos, ball caps, a Beanie Baby bear his wife gave him, and his own pillow.

Milner said, "I definitely wanted a pillow."

Like other workers, Milner said he was motivated to volunteer by patriotism, by the Sept. 11 attacks, and by the thought of his family.

"I've got a grandson that might be in the Army sometime, and I'd want somebody to be there for him," Milner said.

As they boarded the bus, the men were given squishy, star-shaped balls to squeeze for stress relief, and light-up pens for writing in the dark.

Family members stood quietly, watching wistfully and waving. Many wept as the blue bus pulled onto the bright road.

Anniston Army Depot's handiwork on view in war coverage

By Nathan Solheim
Star Staff Writer
04-02-2003

When millions of viewers tune in to catch the latest news from the war in Iraq, they sometimes are looking at the handiwork of the Anniston Army Depot.

Every time a tank lumbers across a sand dune or launches a howitzer shell into the heart of Iraqi forces, it has, in some way, had the hands of Calhoun County all over it.

With the exception of the Bradley fighting vehicle, workers at the Anniston Army Depot build, overhaul and refurbish every tracked vehicle currently used in the fighting.

That means the war in Iraq has the stamp of some 4,700 Alabama workers on it, most of whom live here in Calhoun County.

Paul Harper, the depot's general manager for production, said the depot repairs everything that rolls or shoots.

"Just about everything we're seeing on CNN in the way of combat vehicles comes to the depot for maintenance," Harper said.

Some of the more notable sightings of depot work products include CNN correspondent Walter Rodgers' reports while riding on the back of an M-113 Armored Personnel Carrier as he and soldiers in the Third Infantry Division move toward Baghdad.

NBC Correspondent David Bloom has given several reports while bouncing along with an Army unit aboard an M88 Tank Recovery Vehicle near the border between Kuwait and Iraq.

A number of other tracked vehicles are less visible but still integral to desert fighting.

"It's a good feeling, in particular when you get reports that the systems are working as they should," said Col. Gerald Bates, the depot commander. "So far, there have been glowing reports about the ground systems we're responsible for."

M1 Abrams tanks, made famous by their excursions during Desert Storm in 1991, receive maintenance and refurbishing at the depot; the engine also is built at the depot. Depot workers partner with General Dynamics on that program.

M-88 Tank Recovery Vehicles - a tow truck for tanks rendered inoperable in battle - are repaired at the depot.

M-109 Self-propelled Howitzers, known to war-watchers as Paladins, are converted to their present battlefield use at the depot. The vehicles are capable of shelling opposing forces miles from the front line, and are not intended for direct engagement. The depot works on that vehicle with United Defense.

Anniston Army Depot's handiwork on view in war coverage - Continued

Armored Vehicle Launch Bridges, which allow other heavy combat tanks and troop carriers to cross small rivers or ditches, receive maintenance at the depot.

M-113 Personnel Carriers are a precursor to the depot's newest program, the Stryker Intermediate Armored Vehicle. The Stryker is a wheeled vehicle, and the M-113 has tracks. The depot has responsibility for both. Both are United Defense programs. Both vehicles have many different variations, ranging from medical transports to fighting capabilities.

Fox Vehicles, which are wheeled vehicles, test for contaminants of any kind while protecting the crew inside. They are maintained and refurbished by the depot and General Dynamics.

M-9 Armored Combat Earthmovers, a depot product, were used to help the Army move into Iraq, shoveling through berms and sand dunes.

Many of the drive trains, transmissions and engines used in these vehicles also are refurbished or rebuilt at the depot.

Harper said the depot also works on many of the artillery pieces. Scenes of soldiers loading howitzers are frequent television images now coming into households. Harper said many of those weapons systems also receive maintenance at the depot.

The depot is contributing in other ways, sending a crew of workers to Iraq to support the various combat vehicle programs.

Work is likely to continue on many of the weapons systems, Harper said, because many of them may return to the depot after being damaged in the action.

"Eventually we'd expect the combat vehicles to cycle back through for what's called reconstitution," Harper said. "They'll be brought back up to the standards the customer wants."

Anniston Mayor Chip Howell said the depot's participation in the war effort translates into a higher morale in the area.

"I think it most definitely translates into a sense community pride," Howell said. "When the individuals left here to go to help, that was a great effort on their part to represent the great work force at the depot and the community at large."

Depot workers welcomed home from Kuwait

By Ben Cunningham
Star Staff Writer
08-22-2003

Formality held the room silent as 23 men crossed the stage, but as Kenneth McNeal left it the crowd broke into a standing ovation.

The 75 people gathered in a ballooned, bannered and bunted gym at the Anniston Army Depot Thursday were clapping to welcome McNeal and the 23 other civilian workers home from a six-month tour in Kuwait supporting Operation Iraqi Freedom.

Most of the men had returned over the last several weeks, with other workers shipping out to replace them in Kuwait as they returned. Depot officials used Thursday's ceremony to formally welcome them home.

Col. Gerald Bates, the Depot's commander, spoke before pinning medals on each returning man's shirt. He remembered watching tanks roll across the Iraqi desert on CNN.

"They were all repaired in total or in part by you," Bates told the audience. He thanked the men for their service, and thanked their families for their sacrifices.

Bates and others who spoke at the ceremony referred to the men repeatedly as heroes.

"It feels good," Michael Cannon said of the ceremony. "I feel recognized, anyway." Cannon supervised the crew during their deployment, during which they had to build an engine repair shop from the ground up at Camp Arifjan, Kuwait.

Cannon's wife Deborah broke out in a big grin when asked how she felt about having her husband home.

"Words can not express it," she said.

Joseph Bailey, another of the deployed workers, said he was glad to be back home with his wife, son and daughter.

The 12-hour shifts, intense heat and ever-present dust and sand made work — and life in general — difficult, he said. But the conditions haven't deterred him from volunteering to return to Kuwait.

"I'm looking forward to going back," Bailey said.

Civilian volunteers: 2 depot experts recall their work in Kuwait

By Matthew Korade
Star Senior Writer
11-06-2003

The sand storms rose up in the spring, when the weather grew dry and movement along the supply lines slowed as soldiers waited for fuel and water to be sent.

Mike Cannon and David Daniel had arrived at camp two months earlier, when the U.S. Army base at Arifjan, Kuwait, was still forming in the dunes.

The base sprawled in all directions, providing the Iraqis with an easy target. In the evenings, the workers from Anniston would wait for the sirens to stop, and then they crawled from the bunkers, removing their masks with the soldiers when the all-clear signal sounded.

Mike Cannon, left, and David Daniel discuss their work in Kuwait to support the Army. Photo: Special to The Star.

Cannon and Daniel, logistics experts from the Anniston Army Depot, have since returned from Kuwait, where they overhauled vehicles for the Army. They recalled their experiences in a recent interview.

"You see young kids over there, fighting the fight, you gotta have responsibility for that," said Daniel. "It makes a world of difference, seeing them shaking hands with their shaky hands, saying 'thank you.'"

Missile attacks happened infrequently this far away from the border, and the soldiers would not know one really was coming unless the Patriot battery stationed a mile behind got off a counterattack.

The shot would roar overhead in a whoosh, heating the air as it passed. Sometimes, they would see the explosion flash above in the clouds.

Once, in Camp Doha, 20 miles to the northwest, a young Marine had left his mask behind, and the look on his face as the sirens blared and the missiles flew over in a whoosh, whoosh, whoosh, reminded Cannon always to carry an extra gas mask in his truck.

He and Daniel had come to Kuwait as civilian volunteers to provide maintenance to small military vehicles.

By April, the supply lines had stretched all the way to Baghdad, 358 miles north, and vehicles coming back had been damaged by the heat and sand. Major items, tanks and transports, needed repair.

Civilian volunteers: 2 depot experts recall their work in Kuwait - Continued

Anniston Army Depot employees move a 1790 engine in one of their makeshift workstations in Kuwait. The engine will be put into a vat, which uses chemicals to clean the parts. Photo: Special to The Star.

They thought they would work from a truck bay, but Cannon and Daniel were given an empty warehouse, with no supplies. The sand blew in the wind like whirls of smoke, and the wind carried it inside, making work impossible. A few grains in the wrong place could ruin an engine. They had to have "clean rooms," with filtered air.

Going off the post for materials, they had to have a soldier ride shotgun and an escort vehicle close by. They bought what they needed in the market, wearing flack jackets and helmets to pick out lumber and wire.

Daniel had been to Vietnam, Somalia, Greece, Morocco, during other conflicts. Here, Iraqis attacked U.S. convoys, on average, 25 times a day, and al-Qaida bombings were a constant fear.

"This one's a little different," Daniel said.

While there, Cannon and he held an officer's rank of colonel and lieutenant colonel, to provide protections under the rules of the Geneva Convention should they be taken prisoner.

There were 22 civilian workers from the depot on base, and about 15 from Red River Arsenal near Texarkana, Texas. They helped in the build.

Some mechanics became carpenters and electricians, while others took turns on the vehicles. They completed the maintenance bay in two months, never once turning a soldier away.

Soon, their work was snarling traffic. Soldiers who came to have their trucks fixed were staying to lay bare their worries.

"We gave 'em something no one else give 'em," said Cannon. "We listened to 'em."

The routine continued from 3:30 in the morning until 12 at night – 3 p.m. back in Anniston. That's when they would brief their superiors at the depot.

Cannon turned 50 in the desert. Daniel, 49. By then they had heard the bagpipes play in honor of the dead and the names of the lost read aloud, and they knew good people had died there, in the sands. And at the end of the sixth month, the summer sun beating up clouds of dust, they boarded a flight for home.

Armor made at depot to protect Humvees in Iraq

By Matthew Korade
Star Senior Writer
01-07-2004

The Anniston Army Depot has begun making thousands of kits of armor plating for the military's Humvees in Iraq.

For months the unprotected Humvees have been vulnerable to all manner of guerrilla attacks, from small arms fire to rocket-propelled grenades, to improvised explosive devices, or IEDs.

Now, Depot workers are producing kits of a special blend of steel armor and bulletproof glass for the light transport vehicles, which have replaced the old jeep as the military's all-terrain workhorse in theater.

The new armor is going on the doors, chassis and undercarriage of the vehicles.

"The Army originally probably never envisioned having so many Humvees in a theater of operation like this, so they have a limited number of up-armored Humvees," said Jesse Poor, deputy to the depot commander.

The unprotected Humvees have been a serious concern to many military personnel.

"These Humvees will be a vast improvement in safety for our troops," said Lt. Col. Bob Horton, spokesman for the Alabama National Guard.

Some military units already have begun receiving the improved Humvees, he said, but others need them badly. It's crucial that funding for the armor continue if not increase, he said.

The Depot will display one of the armored Humvees when Gov. Bob Riley and members of Alabama's congressional delegation tour the Depot this morning. The governor's visit is part of a tour of Alabama's four major military posts.

Depot technicians began assisting in the design of the armor about six weeks ago, Poor said. Since then, about 60 workers have been working around the clock, even through the holiday, to build and ship the armor. Rock Island Arsenal in Illinois also is producing the armor in conjunction with the Depot, which buys the material in bulk.

The initial order for several thousand kits of armor was valued at $20 million, Poor said, "so it's a significant increase in workload."

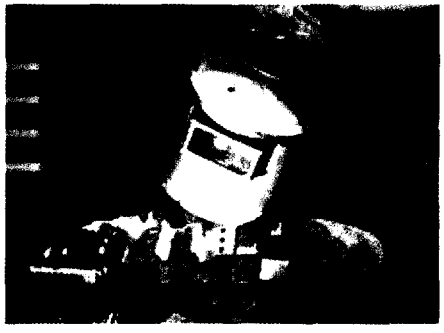
It is only the beginning. The Army is expected to order several thousand additional kits, he said.

"Because of the criticality of this program, it's one of the highest priority programs in the Army," Poor said. "We're working this seven days a week."

'Another life saved'

By Matthew Korade
Star Senior Writer
01-15-2004

The effort to install armor plating on the Army's canvas-door humvees is a giant-size project, larger than anything that most Anniston Army Depot workers have seen.



Depot employee Jim Hale spot-welds some hinges that will be used to install the new heavy armor doors on the Army's fleet of Humvees. Photo: Trent Penny/The Anniston Star

The journey from steel sheets to fitted armor encompasses six buildings and 70 employees at a cost of $20 million to the Department of Defense.

It is the urgency of the mission that keeps the workers duty-bound. They have been taking 12-hour shifts, seven days a week, since mid-December to finish an order for the first 500 vehicles.

"The faster we can push these doors out, that's another life saved," said Ken Jeffrey, the production controller.

Aubrey Shears, right, and Butch Hathorne drill holes in the metal plates of armor.

They will build the armor here and bolt it onto the vehicles in Iraq, adding 1,200 pounds to the four-door vehicles and about half that to the two-door models. Nearly 160 sets have been completed so far.

To push the pieces out, the depot is using a robotic machine called a plasma cutter, which burns through steel at 3,000 degrees Fahrenheit. The device, which uses a pure nitrogen fuel, cuts the steel in a tank of water, which prevents the metal from warping in the extreme heat. Officials hope the technology and the armor contract itself will help the depot survive the upcoming round of base closings in 2005.

In the cutting room, the plasma torch lowers, the tank fills, and a pristine plate of steel disappears beneath the surface. Suddenly, the grimy water is a colored fountain, bubbling orange, shooting out flames and steam. Soon, sharp-angled cutouts in the shape of doors appear.

The machine is fast. Production manager Marshall Crow said using the plasma torch to cut three-eighth-inch steel is like using a band saw to cut Reynold's wrap. The torch can slice the plating at a rate of 12 feet a minute. But it's made to handle eight-inch steel.

'Another life saved' - Continued

In an adjacent room, a pair of workers clamp the freshly cut door panels to a brace that moves them into position for more work. The 80-pound pieces are pushed into a machine that looks like a large oven with windows, where holes for door hardware are bored.

Next door, workers punch holes into the front and rear quarter-panels, which will allow them to be bolted on later. The armor will protect the humvees from small-arms fire and shrapnel, they said.

Nearby, Michael Epps, 27, is cutting door latches. His father-in-law, Rohn Bedford, will install the armor at a service station 50 miles north of Baghdad, along with 10 other depot employees who have been there since November.

"I'm just worried about him being over there, and suicide bombers taking them, actually bombing the humvees they're riding back and forth in," Epps says.

But the armor is a big benefit, he says.

"He's actually told me that what they got on them is already saving lives," Epps says.

The depot is making the armor kits along with Rock Island Arsenal in Illinois. Officials here expect additional work, up to 3,500 kits total.

There have been other parts orders in recent years, "but it's not as hot as this one," says Marvin Keitt, supervisor of the Army's distribution center.

There, workers pack the steel armor into wooden crates bound for Iraq. They are placing a little American flag in each one.

Small arms play big part at the depot

By Matthew Korade
Star Senior Writer
01-16-2004

The Anniston Army Depot's small arms shop is as unique to the military as it is vital.

Of all the installations in the Department of Defense, it alone repairs small arms. Army, Navy, Air Force, Marines, National Guard, it does them all. There is no other military shop like it.

Its employees disassemble, inspect, replace, clean, paint, and rebuild all manner of handheld weapons – everything from handguns to mortars, which technically aren't small arms.

Staring down the gun barrel of possible base closure in 2005, depot officials hope the work being done there will help the depot survive.

Don Packer loads finished M240B machine guns to be shipped out from the Anniston Army Depot Small Arms Shop. Photo: Stephen Gross/The Anniston Star

In case proof of the shop's contribution was needed, a chart on the wall listed the DOD's order for this fiscal year. Nineteen types of weapons were wanted, including nearly 24,000 M-16s, 15,000 Beretta pistols and 11,000 M-4 rifles.

The facility is as big as a super Wal-Mart and is self-sufficient. It can do everything it needs to do to put a weapon back in full working order. There is a firing range the length of a football field, used for testing the accuracy of every weapon coming through. Two smaller ranges are for testing things like the rate of fire.

Sam Latham pulls an M-16 rifle out to be overhauled.

In one, workers with plastic glasses and a stopwatch shoot machineguns into 20-foot concrete tubes. The tubes are filled with water to slow the bullets.

"If the water pressure drops, they shoot a hole through the back of the building," said David McCluskey, the shop chief.

In the longer range, workers aim a .50 caliber machinegun at a white speck a 100 meters away. Up close, the target would be six inches wide, said Stephen Reed, who does competitive shooting in his spare time.

Small arms play big part at the depot - Continued

He fired off a series of shots, as loud as thunder in the long firing tube. The bullet holes made a three-inch-wide group on the target, according to the computer monitor. Normally, the grouping is five inches wide. The rebuilt gun was better than new.

"These things are going to be right there," Reed said of the machinegun.

Tommy Flowers, the division chief, said the shop often improves on the weapons.

"That happens quite frequently," he said.

The MK-19 automatic grenade launcher is a good example. The weapon, which resembles a stubby machinegun, can shoot 500 grenades per minute. It needed some tweaking when it was first built. The small arms shop obliged.

Now, U.S. soldiers use it to pin down people like Uday and Qusay Hussein in Mosul, Iraq.

"You can cut a building down with it," McCluskey said.

Right now, the shop has 40 employees, but more work in other departments. They can be called in an emergency.

Last spring, the DOD realized it had underestimated how many M-16s it needed for soldiers in Iraq. So the shop called in 40 more workers and churned out 1,500 of the rifles – and that was just the first weekend.

"Much faster than buying them from private contractors," said Jack Cline, director of production for the depot. The workers are all cross-trained, he said. "It's pretty dynamic."

The building itself is in lockdown 24 hours a day. Even the boss can't park outside for a minute without getting a ticket or having his car towed.

The doors are guarded by metal detectors, which everyone must pass. And they mean everyone.

"It's hard to tell the commander, 'Sir, you're going to have to come back through one more time,' " McCluskey said.

Unusable parts are piled all about, old wooden rifle stocks, bins of spent shells. Nothing is thrown in the trash.

"We can't have these parts lying around (in the dumpster), or people would try to make weapons out of it," McCluskey said.

Instead, they are packaged and shipped to Rock Island Arsenal, where they are smelted down for reuse.

As for the finished weapons, they are tagged with serial numbers and shipped out. A number stood ready to go to southwest Asia with a deployment of the National Guard.

"These weapons are going to a war effort," McCluskey said. "That's all I can say."

Tension tests Stryker troops in Iraq

By Hal Bernton
The Seattle Times
01-21-2004

(Editor's note: The following story is about the U.S. military's newest armored vehicle, called the Stryker, which is assembled and maintained at the Anniston Army Depot.)

A soldier from the Stryker brigade directs a vehicle to its parking site at the unit's base in central Iraq in this Jan. 4 file photo. Photo: KRT

AD DULUIYAH, Iraq

The driver of the battered red pickup ignored the warning cry to halt as he barreled toward the highway checkpoint. A young soldier raised his gun and had to make a choice: Shoot or risk a possible suicide attack.

Inside the truck was a little boy.

The soldier squeezed off a warning shot - into the air.

It was the right call.

The truck was free of contraband, but it couldn't stop because of a faulty set of brakes, its driver later said.

"I saw a child in the back and that was the deciding factor," said Spc. Seth Downhill, a 22-year-old soldier from Grants Pass, Ore.

Downhill is part of the Fort Lewis, Wash.-based Stryker brigade, one of the Army's most high-tech outfits in Iraq. The 5,000-soldier brigade is outfitted with a new generation of eight-wheeled vehicles equipped with cameras that can home in on images more than a mile away. Onboard computers display terrain and can fetch e-mail from base commanders.

But in the brigade's first month in the troubled Sunni region of central Iraq, it is the human factor that has proved as important as the computers and weaponry as soldiers tracked down weapon caches, resistance fighters and weapons dealers.

While the brigade lost three of its own in a freak, rollover accident Dec. 8, and has fired on and killed at least 15 Iraqis, most days were a long grind of traffic checks, foot patrols and house searches. In most of these tasks, soldiers had to exercise restraint and patience, allowing the intelligence teams attached to each company to circulate and gather informant tips.

The importance of this intelligence reflects the shadowy, hit-and-run nature of combat in Iraq. With no front line, it can be tough for U.S. soldiers to figure out whom and where to fight. Towns seem peaceful; shops offer fresh-picked, local oranges; mosques broadcast the daily calls to prayer. Outside schools, teenage boys wave and yell, "Hey, mister!" as the squads of Strykers cruise by, their fresh green paint now coated with the red-hued soil of central Iraq.

Tension tests Stryker troops in Iraq - Continued

Then, as a convoy heads for the Stryker base, insurgents attack it with small-arms fire. Or a mortar round is lobbed at the Stryker base. Or a powerful improvised explosive device (IED) - now ranked by many soldiers as the top threat - explodes along a highway.

So far, two IEDs have damaged Stryker vehicles. One was a mortar shell that knocked a wheel off one of the $2 million Strykers; another triggered an engine fire that gutted a second vehicle but caused no serious injuries in its 11-soldier crew.

In Samara, one of the toughest towns in central Iraq, Stryker brigade soldiers arrived on Dec. 17 braced for a fight. But they found many residents were friendly, eager to gather around and gawk at the Stryker vehicles. Soldiers started knocking on doors and often paid cash compensation - $20 to more than $40 - to residents whose homes were searched and found to be clean of weapons. Some soldiers nicknamed this the "bread not lead" approach.

"We came in there blowing off locks and kicking down doors," said Capt. Robert Robertson, who commands 21 vehicles and more than 100 men in the Black Hawk Company. "But within a few hours we had pulled back into a whole other operating mode."

Robertson is a muscular West Point graduate from Georgia. A bachelor from a military family, he has a passion for cinema and professional wrestling, which he once toyed with as a possible second career. During missions that may stretch for days on end, Robertson sits in the narrow, low-ceiling interior of a Stryker, punching in keyboard messages and radioing orders to other vehicles.

The inside space can be tight. Two rows of opposing benches seat up to 11 soldiers who sit shoulder to shoulder. Looking forward, you can glimpse what's ahead as viewed through a remote-weapons-systems camera. Though foggy nights fool the camera, it usually conjures up startlingly sharp images of people who would otherwise be all but invisible to the naked eye.

At the very front of the Stryker, in a cramped space that looks like an airplane cockpit, is the driver. A periscope helps him see what's ahead. But he often opts to pop open a hatch and stick his head out for better vision.

During the mission in Samara, the Stryker vehicles were home to the soldiers, who lived out of the rigs at the edge of town for 13 days. By day, they gathered tips they would put to use during nighttime searches.

"The boys were living hard," said Lt. Col. William Buck James, battalion commander. "It rained about every three days. It was cold and it was muddy. They didn't quit and didn't complain, and kept up constant pressure. One of the sources who came up and started giving us targets, she called us ghosts. She said, `We never know where you are coming from - you are everywhere and you are nowhere. You come and go as you please.'

"In my mind, that was exactly what I wanted to do."

By New Year's Eve, when the Samara mission ended, the brigade has tracked down at least 26 significant weapon caches and detained 57 individuals, including seven labeled "high-value targets," according to Lt. Col. Joe Piek.

Tension tests Stryker troops in Iraq - Continued

The Samara operation was by far the most critical mission during the Stryker's debut. Though three soldiers died in the rollover accident, the brigade suffered no combat deaths. Now it is leaving central Iraq and moving north to replace the 101st Airborne Division.

Last week, the Strykers still were running routine security patrols around camp, spread across a bleak expanse of land bereft of trees and grass. And one battalion got what seemed to be a hot tip from a credible source: Fedayeen soldiers, clad in black uniforms, might be gathering on the outskirts of Ad Duluiyah.

At the Tactical Operating Center, a dispatch center in a tent full of computers and staff, the meeting spot is pinpointed on an overhead map.

Soon, a Stryker is en route to drop off a sniper team.

The stakeout lasts deep into the night.

Once again, on this night, the enemy proves elusive.

'The vehicle does perform' - The Stryker sticks to the road like glue

By Matthew Korade
Star Senior Writer
02-17-2004

For those who want to know what it feels like to go 60 mph in a 20-ton steel-construction tank-like vehicle while the sound of a plunging airplane screams in your ears, try riding around in a Stryker.

It has eight wheels on the road and 355 horsepower beneath the hood. Despite its weight, it sticks to the road like glue. Even in rain.

Forget the four-wheeler, this machine has eight-wheel drive. Tires swell or flatten to fit the terrain. The chassis elevates or lowers to see up higher or squeeze down low — sort of like an El Camino on hydraulics. It's the height of technology, officials said.

Just imagine the machine, or a platoon of the machines, barreling toward you from far away like some terrible desert mirage. Suddenly, their .50-caliber machineguns begin to fire and automatic grenade launchers lay down obliterating spray. All the while the crew of infantrymen close in on all sides. It's the stuff of nightmares.

"The vehicle does perform," said Steve Underhil, one of the team managers at General Dynamics, which makes the vehicle at the Anniston Army Depot. "I think it's doing that in Iraq."

What makes the machine more lethal than your average armored vehicle is its high intelligence.

Each Stryker keeps the entire fleet connected by a global positioning system map and text messaging. The system allows one Stryker commander to mark an enemy's position on the map for all the others to see. It has been described as the equivalent of a tactical Internet.

If additional electrical components are needed of the type that makes desert life a little easier on the infantry, there are 110-volt and 220-volt power outlets in the side.

To stop the vehicle, the driver has anti-lock brakes, which prevent skidding. The Stryker goes from 60-0 mph in just 164 feet and about three seconds, officials said. However, takes a little longer for 0-60 mph.

If the tires get shot out, the machine will not stop. After having four of the rubber tires removed, the Stryker was able to crawl out of a bog in tests at Fort Knox, Tenn., officials said. With all the tires flat, it will still keep coming.

It has a range of 300 miles.

'The vehicle does perform' - The Stryker sticks to the road like glue - Continued

General Dynamics tests the vehicles' capabilities at the Anniston Army Depot's unique test track – "Our version of Talladega," said Underhil.

The company checks for vibrating interior components, the acceleration and brakes, the radius and accuracy of the weapons.

"I think it's probably the most elite vehicle in the Army's inventory," said Ken Hickman, a senior technical support specialist who does a lot of the testing.

On a ride around the depot's oval track, it's easy to see why. The vehicle is entirely closed, but occupants can see plain as day through its panoramic periscope.

As the Stryker approaches top speed around a banked turn, centrifugal force pulls the rider into the seat, but the compartment stays level. All the while the engine whines higher and higher, reaching a feverish pitch, until it plateaus somewhere between speeding tractor-trailer and trumpeting elephants. Suddenly, the inertia shifts and the engine slows, like an airliner coming in for a landing. Then it stops, the back hatch opens and it's back out into the damp air.

Underhil said the experience is hard to convey.

"You need to ride in one to understand the full emotion of what this thing can do," he said.

Repairing tanks, equipping armies - Anniston Army Depot has a history of getting the job done

By Matthew Korade
Star Senior Writer
02-22-2004

The Army's 1st Cavalry Division was the first to hit the Iraqi sands in Desert Storm, driving tanks that were 12 years old and dog tired.

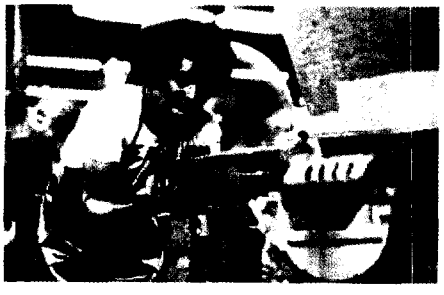
So every night, the infantry would take the tanks off the front to a warehouse in the port of Ad Dammam, Saudi Arabia, where Anniston workers waited.

The volunteers from the Anniston Army Depot turned so many tanks over so fast that in a matter of a few days they had replaced the entire division - nearly 320 tanks in all.

Afterward, some of the 19- and 20-year-old soldiers came up to the workers and hugged their necks, said Jesse Poor, who was running the operation.

"I don't think they ever forgot it," Poor said.

Trains hauling tanks and personnel carriers to and from Anniston Army Depot have been a frequent sight over the decades. While much of the depot's repair work arrives this way, depot workers also have traveled to do their work near the front lines of battle. Photo: File photo



Adrian Taylor, a depot employee, tests a machine gun. Photo: File photo by Stephen Gross/The Anniston Star

Since its inception in 1941, the Anniston Army Depot has played a valuable part in the defense of this country and its allies, officials said - a role that will continue to the military's benefit if the installation should survive the upcoming base cuts in 2005. Today, its employees do the work that saves soldiers' lives, often while risking their own.

In Iraq, they fit humvees with steel plate. In Kuwait, they rebuild engines worn down by heat. Poor, who has since become deputy to the commander of the Anniston Army Depot, shared his wartime experiences along with several former depot officials.

Work like the kind done in Desert Storm makes an impression on depot employees, Poor and the others said. It makes them realize that if they don't do their work, soldiers will not have what they need to stay alive.

Ultimately, Poor and the temporary hodgepodge depot of 500 civilians from the Army's depots - more than half from Anniston - produced more than 800 tanks from an initial goal of 100.

Repairing tanks, equipping armies - Anniston Army Depot has a history of getting the job done - Continued

First, they converted an old cotton warehouse into a production line. As the old Abrams tanks came in from Western Europe, the team rebuilt them and turned their color from forest green to sand.

Instead of doing 10 a day, they did 25, did them so well that the Army just kept increasing the orders. The teamwork between the civilians and the Army was seamless, Poor said.

"We worked, slept and moved as part of the Army. It really was an amazing time for us," he said.

Frank Bibb, 73, was Poor's supervisor on the initial visit to set up the operation. Now retired, he spent nearly four decades at the depot and in the process saw much of the world.

When the depot was getting into the missile business, Bibb started working on a program for the storage of anti-tank TOWs and Hellfires. It took seven years to establish the program, and for three of them Bibb was in Japan, trying a hand at management in the Army's quality control division. At one point, the mission took him to Saigon.

There, he could see the war. He used to watch the Air Force dropping napalm on the nearby hill, he said.

"I got a little of the experience of what our troopers were going through in Vietnam," Bibb said. "It wasn't pleasant."

The daily high was 110-115 degrees in the shade, he said, and the workers put in 15-hour days, "easy."

But the depot's mission has not involved just U.S. wars. Often, employees have assisted allied governments with the U.S. weapons they buy.

For Bibb, this meant helping the royal Thai army to establish an engine-rebuilding facility, the Greeks to do the same, the Egyptians to survey tanks left out in the Sinai Desert. He visited Pakistan several times for a similar reason.

At the time, he was chief of the shop division, overseeing 2,100 employees – half the workers at the depot. But like the others who recounted their stories, he doesn't want recognition. That should go to the workers, he said.

"We sent some top-caliber artisans, craftsmen, our top people, to help these folks," he said.

During his last year and a half at the depot, he was deputy director of maintenance, "which is the job I always wanted," he said. Then he retired.

Repairing tanks, equipping armies - Anniston Army Depot has a history of getting the job done - Continued

Jerre Webb, 72, spent 34 years at the depot, making director of supply before retiring. Supply and maintenance are the depot's two mission-oriented directorates, he said – the others perform support services.

His area was really big during war. Shipping involved every part and every vehicle the depot rebuilds – including a million small arms.

"We shipped all over the world," Webb said.

Much of the work was done for foreign military sales, he said, but the primary objective was to support the troops.

The Vietnam War was a busy time, he said. The depot was one of the few military installations that shipped tanks. Today, it's the only one that does. It also sent small arms and repair parts to the troops.

Webb went with a four-man team to Saigon in 1966 and 1967 to help the Army and South Vietnamese. A lot of "local nationals" worked in the Army warehouses, he said. "They hired them by the hundreds."

Webb's team set up a system to locate equipment – everything from an engine or transmission down to the smallest screw.

The depot was involved with many smaller conflicts as well, such as the "Yom Kippur" or "Ramadan" war, a three-week conflict between Israel and allied Egypt and Sudan in 1973.

Then, it rushed to refurbish old M-48 tanks for Israel, officials said. Webb's directorate worked around the clock to ship them there, getting them on the rail cars, and getting them to the ports.

"Maintenance people had a fast turnaround, and we had a fast turnaround," he said.

Wren Munroe, 72, also worked in supply. He started at the depot in the 1950s, eventually becoming deputy director the shipping area.

Munroe was there when the depot sent its workers into Israel during the 1973 war with nothing but their drivers licenses.

The Air Force pilots were flying the M-48 tanks on a new type of cargo plane, and they were nervous. If they needed to land somewhere to refuel en route, they might have to unload the tanks. So some depot drivers went along.

"They went to work in the morning and ended up in Israel," Munroe said.

Repairing tanks, equipping armies - Anniston Army Depot has a history of getting the job done - Continued

Now retired, he also saw places like Saudi Arabia and Vietnam during his depot career. Munroe was part of a special team in Saigon that worked out large-scale logistics in the port city. The Army had a temporary depot there but wanted to move the equipment to a permanent installation nearby. Munroe's job was to help get it there.

"It's no good if it's sitting there and you can't find it," he said.

In addition, he was at the depot during rapid engagements such as the invasions of Grenada and Panama.

The depot has a continuing mission to keep packages of ammunition or rations or auto replacement parts at the ready.

It's a critical mission, he said. When the troops are committed, they leave with what's on their backs. In deployments, the depot sends the additional supplies on immediately, he said.

"That's one of the most high priority things we did," he said.

Nathan Hill, the former deputy to the commander and now a military liaison for the Calhoun County Chamber of Commerce, said the stories of depot workers in war show the installation's value to the country.

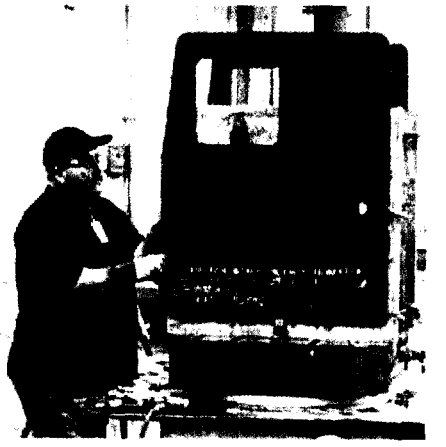
The military needed the depot's skills, expertise and quick reaction capabilities in getting ammunition, general supplies and, of course, its combat vehicles and small arms, he said.

"That's true military value over the years," he said.

Sessions: Armor for Humvees saves lives

By Hannah Bergman
Star Washington Correspondent
03-04-2004

WASHINGTON – Perhaps the last Alabama Army National Guard solider killed in Iraq wouldn't have died if his humvee had the armor made at the Anniston Army Depot and showcased Wednesday in a Senate technology demonstration.



Anniston Army Depot employee Butch Hathorne works at a station where holes are drilled into Humvee armor. Photo: Trent Penny/The Anniston Star

"Its clear that a number of soldiers would have survived or had less severe injuries had they been in up-armored humvees," Sen. Jeff Sessions, R-Ala., said in an interview Wednesday.

Sessions' aides pointed to the death of Spc. Christopher Taylor, 25, on Feb. 16 as an example. Taylor was with the 1165th Military Police Company, based in Iraq, when his convoy was struck by what that Pentagon calls "an improvised explosive device."

Wednesday's technology demonstration was organized to provide senators, particularly those on the Armed Services Committee, with the chance to see products for which they've sought funding and for which the Department of Defense has provided research dollars.

The humvee armor, which Sessions pushed for, was one of the main attractions.

Sessions said the vulnerability of canvas-and-plastic-sided humvees – the most common of the Army's various models – was the chief concern that emerged from his trip to Iraq in August. He wrote the Department of Defense and White House about his concerns.

In previous combat situations, humvees haven't seen the kind of attacks that are taking place today, Sessions said.

The Army, which also had concerns about the situation, has responded to Sessions' report. One of its solutions to the humvee's weakness has been the development of Armor Survivability Kits that workers at Anniston Army Depot helped create and are now producing. Other depots also are working on the project.

Anniston makes about 100 kits per week, working around the clock to help complete the Army's total order of 7,200 by the end of April. That includes 18,000 ballistic-tested steel doors with 3-inch thick windows.

The finished kits – 1,000 pounds each – are shipped in wooden crates to Iraq and Kuwait. The Anniston-made kits often have an American flag slipped in with them, a show of support from members of the American Federation of Government Employees Union working on the project.

Once the kits arrive at their destination, civilian employees from the depots install them on humvees already there.

Sessions: Armor for Humvees saves lives Continued

"It's the most expedient solution we can provide right now," said Maj. Dan Rusin, who works for the Army Research Lab. He showed off parts of the new armor to senators at the technology demonstration, while explaining how the armor is made and the Army's needs for it.

Army: 'The Stryker is doing great'

By Hannah Bergman
Star Washington Correspondent
03-11-2004

WASHINGTON – The Army's Chief of Staff told a House appropriations subcommittee that Strykers in Iraq were doing better than advertised and that the vehicles have performed well in combat operations.

The comments came in response to inquires from two committee members during one of several hearings Wednesday on the defense budget for the upcoming fiscal year.

"The Stryker is doing great," Gen. Peter Schoomaker said. "It's not just that the vehicle is doing great, it's that the whole concept is doing great."

The Stryker is mostly built at Anniston Army Depot.

Schoomaker said that, when attacked, Stryker armor had prevented serious injuries — one solider had received only a broken ankle. By comparison, similar attacks on unarmored Humvees have led to people losing their legs, committee members said.

Representatives also focused on the Army's ongoing efforts to armor its soft-sided Humvees.

Rep. Norman Dicks, D-Wash., assailed Schoomaker and Acting Army Secretary Les Brownlee for not already having armored Humvees and body armor for soldiers.

"The American people want to know, of course, why we didn't have the Humvees we should have had," Dicks said.

Schoomaker maintained that in previous Army deployments armored Humvees were not needed. The Army had been prepared for the war in Iraq, he said, but things had changed when the mission changed to one of maintaining stability in the region.

"I wish we were clairvoyant and smarter and had seen some of these other things," Brownlee said.

Kits to armor Humvees are now being made and shipped to Iraq, after Congress pressured the Army and its own staff became concerned about the number of casualties in Humvee attacks. Many of the kits are made at Anniston Army Depot, and depot workers are taking part in the effort overseas to install them on Humvees in the field.

The fast-paced production of those Humvee kits, and other equipment for soldiers, has put additional demands on the Army's budget, Brownlee told the committee. Those demands will exceed funding the Army received in supplemental appropriations and in the current budget, he said.

Army: 'The Stryker is doing great' - Continued

"We're working with OSD (Office of the Secretary of Defense) on a daily basis so they know what our needs are," Brownlee said.

Brownlee expects help from the Defense Secretary to meet the Army's obligations.

Also, in his opening statement, Brownlee addressed recent reports of sexual assaults on servicewomen by men serving with them in Iraq and Afghanistan. The assaults will not be tolerated, he said, and the Army is addressing the problem.

Rep. Mike Rogers, R-Saks, wrote a letter to an undersecretary of defense this week, expressing his concern.

"Our soldiers serving in combat zones face many military threats and should not need to be concerned about sexual assaults from their comrades," the letter said. "Indifference toward sexual violence in the armed services must stop."

Army's chief of staff tours depot

By Matthew Korade
Star Senior Writer
03-25-2004

General Peter J. Schoomaker, the Army's chief of staff, toured the Anniston Army Depot with several of his staff members Wednesday.

The general visited the depot's combat vehicle facility, where he was shown the repairing and upgrading of tracked combat vehicles as well a display of small arms that the depot repairs, depot spokeswoman Joan Gustafson said in a news release.

Schoomaker met with depot employees who are manufacturing Humvee armor and some workers who had recently returned from Iraq, where they were installing the Humvee armor kits in-country.

Maj. Gen. N. Ross Thompson, III, commanding general of Tank-automotive and Armaments Command, and Col. Gerald Bates, Jr., the depot's commander, accompanied Gen. Schoomaker on his tour.

Other stops included the depot's turbine engine repair shop and the Stryker factory, which is run by General Dynamics.

Schoomaker commented that the work force should be proud of their efforts in support of Operation Iraqi Freedom, which include the manufacturing and installation of the Humvee armor kits, the production of the Stryker combat vehicle and the overhauling of armored vehicles, the news release said.

Gen. Thompson and Col. Bates said the Army chief of staff's visit was an indication of the importance of the depot in supporting U.S. military forces worldwide.

Depot workers describe life in a war zone

By Matthew Korade
Star Senior Writer
03-26-2004

Larry Sprinkle, a welder with the Anniston Army Depot, works the midnight shift in Iraq replacing an injector pump. The vehicle was needed a few hours after it was brought in, so the team worked to ensure it would be ready. Photo: Special to The Star

In the summer, the civilian workers lived in a tent in a camp that overlooked a desert and a nearby village, where the fighting continued despite the defeat of the Iraqi army.

In the night, the mortar fire came trailing down into the camp. The American volunteers took cover in their tents and listened to the sound of the explosions coming in, and watched the soldiers going out to find and destroy the resistance.

At first the shelling disconcerted Clark Hightower and Randy Hughes, who work with the Anniston Army Depot, but they got used to it.

One shell landed while Hughes, the chief of the depot's turbine-engine shop, was washing up after work, but he just continued rinsing his hands while the others who had taken cover looked up in surprise.

"If they zero in, you're gone," he told them.

The shelling is one of the daily dangers for the civilian volunteers, who find themselves in a continually changing mission overseas. They now are tasked with installing armor on the thousands of Army Humvees, vehicles that serve a vital role protecting convoys in Iraq. In recent weeks, attacks on convoys have risen sharply, forcing the temporary abandonment of some supply routes, commanders have said.

Hughes and Hightower are among the members of crews that rotate duties between the depot and the desert. They returned home in December after six months in Kuwait and Iraq, but they think often of their co-workers near the firing lines.

They remember the Apache helicopters that are called in to strike back at assailants. And from soft beds in Alabama, they remember how memories of home once carried them off to sleep amid the hum of electric generators.

For the 15 depot workers at the camp in northern Iraq and the 25 at Camp Arifjan, Kuwait, the mission is one of pressure and strain. The first group arrived in January, 2003, to set up a shop in Arifjan to rebuild tank engines that had been scourged by heat and sand. Soon, the workers made the transition to a dual mission, and some were sent north.

They were told to establish a service center in northern Iraq for the Humvees and other vehicles coming off the front.

Depot workers describe life in a war zone - Continued

But then the mission shifted again.

They were ordered to begin bolting armor onto a few thousand relatively unprotected Humvees, to prevent military personnel from being killed by the improvised explosive devices and rocket-propelled grenades favored by the Iraqi irregulars. This latter effort is where the workers' energies mainly are focused today.

"When I seen my first A-10 (fighter jet) pull some evasive maneuvers that second morning, reality really kicked in," said Hightower, 39. A machinist, he was in a convoy at the time, trucking supplies north to the Humvee service center in Iraq. It's hard getting supplies north, he said.

The challenges the workers face are many and varied. If the camp's water tank breaks, leaving soldiers without showers, or if a wire has been strung in such a way that could garrote a soldier, the depot workers are there to fix it. They are chosen to go based on their multiple skills, said Joan Gustafson, a depot spokeswoman.

Right now, the volunteers are working so hard installing armor that they have little time to service vehicles, although that remains their secondary mission, Hughes and Hightower said.

When the workers can perform some small task for the soldiers, such as changing a side-view mirror or power-washing a vehicle, Hughes said, "you'd think it was Christmas to these boys."

Back home, the depot is continually adjusting its mission to meet the Army's needs, said Jackie George, chief of the depot's fielding operations.

For example, on Presidents' Day, depot officials got an early morning call from the workers overseas saying they needed an additional shipment of parts, George said. The workers in Anniston spent the weekend getting it to them.

"If we didn't have people supporting us, we couldn't do our jobs to support the soldiers," said Hughes, 51.

The depot's main goal is supporting the soldier through its production, Gustafson said.

Their efforts gradually are having an effect, the workers said.

"A lot of Iraqi locals hate Saddam," said Hightower. "They like Americans, they're grateful."

Tow trucks on tracks

By Matthew Korade
Star Senior Writer
04-01-2004

It looks like a crane with teeth.

The Anniston Army Depot rolled a freshly rebuilt sand-colored recovery vehicle off the line Wednesday — the first of 25 such vehicles that are heading to the Mojave Desert for desert training.

Army personnel at the National Training Center at Fort Irwin, Calif., will use the vehicles, called M-88s, to train for desert warfare. The vehicles, basically heavy tow trucks on tracks, will hoist, winch and rescue broken-down tanks from pretended jeopardy.

Military personnel will use what they learn on battlefields in Afghanistan and Iraq.

Overhauling and sending the 25 recovery vehicles — about half of the training center's fleet — is part of the depot's mission to support those fighting the war on terror.

Mark Twigg, senior ordnance logistics officer from the National Training Center at Fort Irwin, Calif., talks about the impact of the M-88 at the training center. Photo: Stephen Gross/The Anniston Star

Depot workers tore the vehicles down and built them back up, resetting odometers to zero. They tested them and found that some are better than new, depot officials said.

Army units from around the nation come to Fort Irwin and use the vehicles to train. Exercises, which are at the brigade level, take place there 10 times a year for about 28 days at a time, training nearly 50,000 Army men and women.

"So it's kind of like a rental car fleet, I guess you could equate them to," said Chief Warrant Officer Mark Twigg of the training center, who attended Wednesday's ceremony. He said the center's fleet was in bad shape and in need of repair

The vehicles can handle battle in all kinds of terrain and weather, officials said.

The 25 vehicles, which will be completed by May, will lower maintenance costs for the training center while bringing work to the depot, said Paul Harper, general manager for production operations.

And it will help improve the soldiers' training.

"We're excited about it," Harper said.

Fayetteville (NC) Observer - Thursday - April 1, 2004
Light Tanks To Return

by Kevin Maurer, Staff Writer

The 82nd Airborne Division is regaining light tanks that can be parachuted onto the battlefield, seven years after the division lost its armor battalion.

The Army's Training and Doctrine Command approved the transfer of four M-8 Armored Gun Systems to the 82nd Airborne Division last month, said Maj. Rich Patterson, a spokesman for the 18th Airborne Corps.

The vehicles should arrive at Fort Bragg in the next couple of months, Patterson said.

The four tanks will be assigned to the 1st Battalion of the 17th Cavalry Squadron.

He said it will not take long before the tanks are operational because the paratroopers remember how to deploy the M-551, the tank they worked with previously.

3-person crew

The AGS is an experimental light tank about the size of a Ford Expedition, excluding the length of the gun barrel. It is manned by a three-person crew and is armed with a 105 mm cannon and two machine guns. The thickness of the tank's armor varies, depending on its configuration, but it should be adequate to protect against roadside bombs.

The paratroopers say they need a vehicle with more firepower that can be air-dropped, Patterson said.

In 1997, the 82nd deactivated the 3rd Battalion of the 73rd Armored Regiment. The unit operated M-551 tanks, a Vietnam-era light tank. Patterson said the 82nd retired the M-551 because it was old and difficult to maintain.

After the M-551 was retired, the Army looked at several replacement vehicles, including the AGS. The development program was scrapped because of budget constraints in the late 1990s.

"It will be very easy to integrate into our standard operating procedure," Patterson said.

Rep. Robin Hayes, a member of the House Armed Services Committee, was instrumental in getting the vehicles for the paratroopers.

The 82nd told Hayes it needed a light armored vehicle like the AGS. Hayes, a Republican from Concord, found the systems and contacted the secretary of defense to request that the AGS "be put into play," said Jonathan Felts, a spokesman for Hayes.

He stressed that despite the deployment of the gun system to the 82nd, Hayes does not endorse it. The AGS only fills a division need.

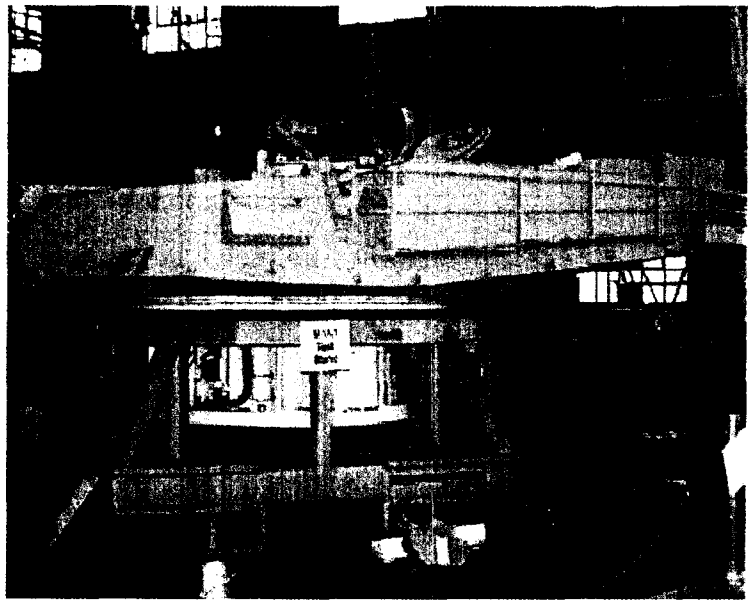
Fayetteville (NC) Observer - Thursday - April 1, 2004
Light Tanks To Return - Continued

The manufacturer, United Defense LP, has four M-8 AGS vehicles in stock at their facility in York, Pa.

Herb Muktarian, a spokesman for United Defense's ground systems division, said the vehicles are in "excellent" condition and ready to ship to Fort Bragg as soon as the Army makes its request. United Defense has not received a formal request for the AGS from the Army, Muktarian said.

Artillery repairers working long hours to get the work out

By Clester Burdell, Anniston Army Depot Public Affairs Office



Repairing, rebuilding, and reassembling are what they do best. The artillery repairers in building 143 are working six days a week to ensure that the combat vehicles they are working on are in like new condition before they leave their shop. Currently, their workload includes the M1 family of vehicles, of which belong to the Marine Corps.

(The turret sits on a unique piece of equipment-only one of two tests stands in the world.)

Under the leadership of supervisor Gary Henderson, the 65 employees, who work both first and second shifts, take pride in knowing that the work they perform is their contribution to the war fighters. "This is no easy job – the employees must possess a hydraulics, electronics, and optical instrument background," he said. Not only is his staff knowledgeable, but they are "devoted to ensuring that they meet the productions schedules."

"As an Army veteran, I realize how important my job is," said 28-year-old David Mize. "It could have easily have been me on the receiving end."

Their mission is to reassemble the turret and its components. The first stop is one of three low stands, where primarily the outside work is performed at various stages depending on the date received. The loader's hatch, storage boxes, smoke grenade launchers, and ammunition compartment doors are all installed, as well as the rotor, which is the first part of the gun.

(Artillery repairman James Wiggins puts the wire harness on an M1A1 vehicle.)

This is followed by work on the high stand, which lifts the turret for the inside work to be completed. At this point, the artillery repairers attach the platform, install the electronics and hydraulic systems which provide pressure to elevate and traverse the gun and rotate the turret, and the wiring and harnesses.

For the past four years, the work has been performed practically injury free.

"Our safety record is above reproach", said artillery leaderman Ronnie (Jo-Jo) White. "We have minor scratches and bruises, but each employee looks out for his co-worker to ensure that all of the safety gear is being worn, and that the area is clear before parts are moved or operations performed. We have a great system."

(Using a mixture that waterproofs the Gunners Primary Sight (GPS), Stacy Thornton operates the protective sealant mixer.)

The final stop is the test stand. Not just any test stand, but the depot owns one of two that exist in the world! It actually replicates the hull. The turret is rotated and numerous mechanisms are tested – the traverse mechanism, the elevation mechanism, hydraulics, and the electronics. Also the bore sights the electronic sighting system to make sure it is compatible.

"These steps incorporate the importance of the quality of work performed here at the depot by these highly skilled employees," said Henderson. "They are quite passionate about their jobs."

(Editors note: The pictures were taken during first shift. However, the supervisor spoke highly of the second shift employees and their work ethics. They include: Andy Borders, James Frye, Keith Grubbs, Calvin Hunter, Tommy Hutt, Blake Knopp, Clint McClellan, and Waymon Rollins.)

Back to Top

DEPARTMENT OF THE ARMY
ANNISTON ARMY DEPOT
7 FRANKFORD AVENUE
ANNISTON, ALABAMA 36201-4199

REPLY TO
ATTENTION OF:

AMSTA-AN-I

8 March 2004

MEMORANDUM FOR

NETCOM/9th ASC Regional Office-SE, ATTN: NETC-SSE-D, 1593 Hardee Avenue, SW, Ft. McPherson, GA 30330-1057
US Army Tank-automotive and Armaments Command, 601 East 11 Mile Road, ATTN: AMSTA-CS-T, Warren, MI 48397-5000

SUBJECT: Candidate Army Processing Center (APC)

1. The Army Processing Center Survey for Anniston Army Depot (ANAD) is attached.

2. Anniston Army Depot meets the criteria for Army Processing Center. We have a state-of-the-art fiber optic data infrastructure that extends 77 miles with 85% of the fiber encased in underground cement ducts. The telephone network consists of 125 miles of fiber and copper with 80% encased in underground cement ducts operating off of an SL-100 Super-node Switch with one main station and one relay station. The speed of our network is up to 4GB, and is currently designed for flexible expansion up to 10GB. Wide area bandwidth is 15 MB with a 5MB alternate path. The ANAD infrastructure has both data and voice redundancy and load balancing. We have a state-of-the-art CA UNICENTER enterprise management system that provides the capability to manage assets connected to the network; provides remote control real-time support, remote software delivery and real-time desktop IAVA updates. We currently use this technology to provide automation support for an ANAD Division located at Hill Air Force Base at Ogden, Utah. Our system consists of a Worldview network management module that provides administration and management of our network and the capability to monitor remote networks as well. ANAD is currently in the process of reviewing a Service Level Management module designed to run with our current CA UNICENTER system. This will be a valuable tool that we will use to manage existing customers and others if APC designation requires us to do so.

3. We also provide Standard Depot System (SDS) support to customers at Rock Island Arsenal, Lexington Blue Grass, Water Valet Arsenal, Pine Bluff Arsenal and SBCCOM. A large percent of the remaining technical and functional skills to support Standard Depot System processing reside at ANAD. SDS batch processing is accomplished at an Army Mega-Center. ANAD has highly skilled System Administrator expertise, more than 50% graduated in a technical discipline with eminent scholar status.

4. ANAD is self-contained with a fire department (two stations), utilities, power generating plant, force protection, risk management with a well-trained emergency response team. Although relatively rural in locale, ANAD is easily accessible by road, rail and air. Only five miles away, I-20 provides easy access to Birmingham, Montgomery, Atlanta and numerous common carrier routes.

5. We have a strong partnership with Industry, collocated tenant activities and the Anniston area community. The community is noted for its fine diversity in restaurants, National Resorts, economic development and higher educational facilities, including technical training, in close proximity.

ALBERTA B. FREEMAN
Director of Information Management

Encl

A	B	C	D	E	F	G	H	I	J
#	Category	Sub-Category	Minimum (if applicable)	Definition	Measure	Response	Description	Cost to Comply	Schedule to Comply
RESPONSE KEY				WHITE CELLS = DO NOT ENTER DATA (CELLS ARE LOCKED)					
				YELLOW CELLS = OPTIONAL					
				GREEN CELLS = MANDATORY					
1	Infrastructure			Defines minimum infrastructure requirements for the APC. Army requirements include power, HVAC, water, fire protection, etc. The Uptime Institute establishes standards for data center capabilities and has defined four tiers for data center performance (www.upsite.com/whitepapers.html). Each tier includes increasing levels of redundancy for electrical and mechanical systems (heating, ventilating, air conditioning, fire suppression and other mechanical systems). Describe the various infrastructure components and redundancy available at the APC.					
1.1		Spatial Requirements		Provide information on minimum office and data center space available in the APC. Also identify how much expansion the APC can support. Provide information on any operational complexities that may arise due to expansion.			Building has approximately 40K sq ft with 20K supply and available [illegible]		
1.1.1		Total space available			Square feet	40,000			
1.1.2		Total square footage of raised floor for server and tape space	10,000 sq. ft	Contiguous space preferable	Square feet	13,600	10,400 sq ft contiguous space in building 363. 3,200 additional sq ft available in building 362.		
1.1.3		Total square footage of office area	5,000 sq. ft	Contiguous space preferable	Square feet	15,360	5760 is located in Building 363 and 9672 is located in Building 362		
1.1.4		Ceiling height	10 feet	Self Explanatory	Feet	10 ft 4 in			
1.1.5		Raised floor height		Self Explanatory	Feet	1 ft 8 in			
1.1.6		Future expandability (including limitations)		Can the structure be expanded, without acquiring additional land, special permits (other than regular construction permits), how would expansion affect existing operations	Description		[illegible]		
1.1.7		Operational complexity		Does the space create a complex operating environment because of existing conditions that would require placing physical equipment in less than efficient configurations. Are there any known legal complexities that need to be resolved before the APC can be established on the site.	Description		[illegible]		
1.2		Structural							
1.2.1		Live-load capacity	150 lbs. per sq. ft.	Self Explanatory	Yes/No	YES	250 lbs per sq ft		
1.2.2		Live-load capacity for battery backup & UPS	250 lbs. per sq. ft.	Self Explanatory	Yes/No	YES	250 lbs per sq ft		
1.3		Power							
1.3.1		Electrical capacity (per square foot)	50-100 watts per square foot (300 recommended)	Self Explanatory	Watts/Square foot	30 Watts/Sq. Foot	This is for the entire 40,000 sq ft building.		
1.3.2		Diesel backup power system		Self Explanatory	Yes/No	YES			
1.3.3		Site location for backup generators		Self Explanatory	Yes/No	YES			
1.3.4		Power distribution and conditioning units	At least one backup	Self Explanatory	Yes/No, number	YES			
1.3.5		Automatic transfer switch	At least one backup	Self Explanatory	Yes/No	YES			
1.3.6		UPS - Only one redundant (Tier II)	At least one backup	Self Explanatory	Yes/No	YES	Generator with Battery Backup. Automatic Switching.		
1.3.7		UPS - 1 active 1 passive delivery path (Tier III)	At least one backup	Self Explanatory	Yes/No	YES	See 1.3.6		
1.3.8		Transient voltage surge suppressors (or equivalent)		Self Explanatory	Yes/No	YES	Within the UPS		

1.3.9		Dual Source Power	At least two physically independent sources of power into the building	Power is provided from two sources using two different independent lines. This is a service frequently offered in metropolitan areas to protect against local infrastructure problems that would cause an excessive or extended demand on the UPS service.	Yes/No	YES			
1.4		**Mechanical Engineering**							
1.4.1		Adequate fuel oil storage capacity	24-74 hr operational cycle for backup diesel generators	Self Explanatory	Yes/No	YES	1000 gallon tank with refill capability on depot.		
1.4.2		Rooftop area adequate for cooling systems	Within a secure environment	Self Explanatory	Yes/No	YES			
1.4.3		Adequate site area for transformers or substation	Within a secure environment	Self Explanatory	Yes/No	YES			
1.5		**Air Conditioning**							
1.5.1		Precision HVAC (high-voltage air conditioning)	At least one backup capable of Army load	Self Explanatory	Yes/No and Description	YES	140 Ton Rotary Screw Chiller. No current backup, but plans [illegible]		
1.5.2		Rack-based air distribution		Self Explanatory	Yes/No	NO	Along with changes in technology, we have upgraded our AC. It pulls from the ceiling thru the raised floor.		
1.5.3		Rack-mounted air distribution		Self Explanatory	Yes/No	NO	See 1.5.2		
1.6		**Flooring**							
1.6.1		Air distribution		Self Explanatory	Description		Pulls from the ceiling thru the raised floor.		
1.6.2		Underfloor: cable management		Self Explanatory	Yes/No	YES - Partial	Within the Network Operation Center.		
1.6.3		Underfloor: drainage system		Self Explanatory	Yes/No	NO			
1.6.4		Sub-floor water detection system		Self Explanatory	Yes/No	YES			
1.7		**Fire**							
1.7.1		Fire retardant system (wet and dry)		Self Explanatory	Yes/No	YES	In the Computer Center is a wet system and the rest of building has a dry system		
1.7.2		FM-200 fire suppression system (for data center equipment)		Self Explanatory	Yes/No	YES			
1.7.3		Pre-action 'sprinkler' system (for building protection)		Self Explanatory	Yes/No	YES			
1.7.4		Fire alarm system/smoke detectors		Self Explanatory	Yes/No	YES			
1.8.		**System Control**							
1.8.1		Remote access		Self Explanatory	Yes/No and Description	YES	Remote Capability is available through Uniserve		
1.8.2		KVM (keyboard, video, mouse) solution		Self Explanatory	Yes/No	YES			
1.8.3		Network Operations Center		Self Explanatory	Yes/No and Description	YES	[illegible]		
1.9		**Facility Monitoring**							
1.9.1		In-band and out-of-band monitoring of Power, UPS, Generator, Temperature & Humidity, Leak detection, Intrusion		Self Explanatory	Yes/No and Description	YES	[illegible]		
1.10		**Accessibility**							
1.10.1		Easy site access for deliveries/maintenance		Self Explanatory	Yes/No and Description	YES	[illegible]		
1.10.2		Equipment staging area		Inside the facility, protected from the elements	Yes/No, sq. footage	YES - [illegible]			
1.10.3		Freight elevator		Self Explanatory	Yes/No, max weight	NO	Elevator not required not multi-storied		
1.10.4		Handicap accessible entrance		Self Explanatory	Yes/No	YES			

1.10.5		Handicap and general use elevator		Self Explanatory	Yes/No	NO	Elevator not required not multi-storied		
1.10.6		Bathrooms up-to-date and handicap accessible		Self Explanatory	Yes/No	YES			
1.10.7		Physically diverse building entrances		Self Explanatory	Yes/No	YES	Roll up warehouse doors for freight and personnel doors for people. Also data media entry to include fiber, broadband and UTP.		
1.10.8		For multiple-story building, ensure adequate riser capacity for primary/emergency power, HVAC (heating, ventilating, and air conditioning), diverse fiber entries and other vertical services (water, gas, communication cabling)		Self Explanatory	Yes/No	NOT APPLICABLE			
1.11		**Water**							
1.11.1		Adequate water source		If on a well system, pump must have backup power	Yes/No	YES			
1.11.2		**Other infrastructure components**		Describe other infrastructure components that impact building safety, accessibility, etc.			[illegible]		
1.11.3		Storage tank - 7 days full load		Self Explanatory	Yes/No	YES			
1.11.4		Day tank - 24 hours full load		Self Explanatory	Yes/No	YES			
1.11.5		Load bank testing - once a week		Self Explanatory	Yes/No	YES	Load Testing done weekly		
1.11.6		Speed of operational recovery		Self Explanatory	Description		[illegible]		
1.11.7		Truck-level loading docks		Capable of handling semis (tractor-trailers)	Yes/No, number of docks	YES	4 Loading Docks		
1.11.8		Grounding and lightning protection		Per local code	Yes/No	YES			
1.11.9		Lighting		Per local code	Description		[illegible]		
1.12		**Architectural**							
1.12.1		Larger column bays	30 feet by 50 feet preferred	Self Explanatory	Yes/No	YES	32 ft x 62 ft		
1.12.2		Distance from structural slab to lowest structural member	Minimum 13 feet, 6 inches	Self Explanatory	Feet	20 ft			
1.12.3		Efficient floor plates (rectangular, square, side core preferable; elevator and service core on side rather than central to building)		Self Explanatory	Yes/No	YES	Square		
2.0	**Connectivity**			Indicate if Optical Fiber capability is available at your CO and also provide the OC rates supported by the site. Comment on the redundancy and easy availability of communication links and ability to scale for higher bandwidth requirements.	Description	[illegible]			
2.1		Bandwidth Available	45 Mbps (FY04) OC192 (FY05)	45 Mbps capacity of uncommitted bandwidth in FY04 and OC192 in FY05 and acceptable level of tolerance for future interface and bandwidth requirements	Yes/No and Description	[illegible]			
2.2		Is the site provisioned for Optical Carrier (OC) rates to your CO (i.e. physical fiber path)?		Self Explanatory	Yes/No; if No provide the cost for providing fiber with Single Path	[illegible]			

2.3		Is the site provisioned for OC rates to more than 1 (CO) over diverse physical paths (2+ separate physical fiber paths)?		Self Explanatory	Yes/No; if No provide the cost for providing fiber with Dual Diverse Path	YES			
2.3.1		How many access paths are dual homed?	Both access paths must be dual homed		Yes/No	YES	2 Available		
2.4		What is the physical distance to installation COs		Self Explanatory	Miles from CO1 and CO2	1600 Miles			
2.5		Is the installation provisioned for OC rates on installation terminal equipment (router/switch blade capable of OC)?			Path 1 Yes/No; Path 2 Yes/No and the rate.	YES			
2.6		What is the maximum rate of the OC terminal equipment on-hand (installation side)?		Self Explanatory	Path 1 Rate; Path 2 Rate	OC12			
2.7		Is the installation receiving OC service today and what is the rate?		Self Explanatory	Path 1 Yes/No; Path 2 Yes/No and the rate.	YES OC3			
2.8		What is the MRC of OC service today?			Path 1 Cost; Path 2 Cost	$7,000			
2.9		Does the installation know the OC rates offered/provisioned at the CO?		Self Explanatory	OC3 Yes/No; OC12 Yes/No; OC24 Yes/No; OC48 Yes/No; OC192 Yes/No	OC3 - Yes; OC12 - Yes; OC24 - No; OC48 - No; OC192 - No			
2.10		Does the site have 2 separate physical SIPRNet Paths	At least T1 connectivity (1.54Mbps) at 2 separate physical paths		Yes/No	YES			
2.10.1		Are both of these paths at least T1?	At least T1 connectivity (1.54Mbps) at 2 separate physical paths		Yes/No	YES			
3.0	**Physical Security**			Comment on the various physical monitoring and security capabilities at the facility including secure access and surveillance systems etc.	Description				
3.1		Perimeter fence		Self Explanatory	Yes/No	YES			
3.2		Digital control monitoring		Self Explanatory	Yes/No	YES			
3.3		24 hour security guard		Self Explanatory	Yes/No	YES			
3.4		Card swipe access to facility		Self Explanatory	Yes/No	NO	Planned for implementation FY04		
3.5		Card swipe access to data space		Self Explanatory	Yes/No	NO	Planned for implementation FY04		
3.6		CCTV - record entire external perimeter		Self Explanatory	Yes/No	NO			
3.7		Buried WAN communication links		Self Explanatory	Yes/No	YES			
3.8		Access for persons without clearance		Self Explanatory	Yes/No	YES with Escort			
3.9		Facilitates the undertaking of proper recovery planning actions in accordance with the FIPS PUB 31 guidelines		Self Explanatory	Yes/No	YES			
3.10		Can persons with no clearance access the facility		Self Explanatory	Yes/No	YES with Escort			

3.11		Single point of entry for security purposes (emergency exits highly controlled and monitored)		Self Explanatory	Yes/No	YES			
3.12		What local rules and regulations are being implemented to provide force protection measures at the site?			Description				
3.12.1		Please explain why these rules and regulations are applicable to this site.							
3.12.2		Please describe how these rules and regulations are being applied at this site.							
4.0	**Survivability**			Ability to withstand a natural or man-made disaster including vibrations, above floodplains, location, etc.	Description				
4.1		Protection from electromagnetic interference		Self Explanatory	Yes/No	YES			
4.2		Disaster avoidance: natural disaster		Hurricane, tornado, earthquake, flood zones	Yes/No	YES			
4.3		Disaster avoidance: man-made disaster		Self Explanatory	Yes/No	YES			
4.4		Site location including building type		Self Explanatory	Description				
4.5		Campus environment (i.e., non-residential area)		Self Explanatory	Yes/No	YES	Office/Industrial Complex		
4.6		Minimal risk of vibration (railroad, MV, construction)		Self Explanatory	Yes/No	YES			
4.7		Located above 100 year flood plain		Self Explanatory	Yes/No	YES			
4.8		Easy highway access for deliveries and end-user access for maintenance		Self Explanatory	Yes/No	YES			
4.9		Minimal risk of vibration (railroad tracks, motor vehicle traffic, manufacturing or construction noise)		Self Explanatory	Yes/No	YES			
5.0	**Timeline**			Any minimum construction and transition timeline related issues. Highlight if the facility currently exists, if it needs any ramp up to support Army installations.	Description				
5.1		Any construction needed including infrastructure components		Self Explanatory	Yes/No	YES	Additional Space Available		
5.2		Implementation issues		Describe if the site is expected to face any implementation issues in terms of approvals, operational and infrastructure areas.	Description				
5.3		Transition issues		Describe if the site is expected to face any transition issues.	Description				
5.4		WAN communication link provisioning		Self Explanatory	Yes/No	YES			

6.0	**Personnel Impact (HR)**			Provide a high level profile of the current staff, their technical experience, security clearances and ability to support Army. Also comment on the overall workforce of the organization, how many people, where they are located, availability of local workforce and training.			[redacted]		
6.1		Current staff profile		Self Explanatory	Description		[redacted]		
6.2		Sourcing strategy		Self Explanatory	Description		[redacted]		
6.3		Workforce and capability to retain the workforce		Self Explanatory	Description		[redacted]		
6.4		Local labor market		Self Explanatory	Description		[redacted]		
6.5		Local accredited universities		Self Explanatory	Description		[redacted]		
6.6		Local training capabilities		Self Explanatory	Description		[redacted]		
7.0	**Approvals and Ownership**			Describe ownership of the building government owned versus commercial owned. Also discuss if the site has commander and other approvals for APC use.			[redacted]		
7.1		Does Army own the site? If not, who does?		Self Explanatory	Description		[redacted]		
7.2		Commander approval		Self Explanatory	Yes/No	YES	Commander totally supports this effort.		
7.3		Other			Description		[redacted]		

Directorate of Information Management

Directorate of Information Management BRAC information:

Total onboard strength: 69

Under ACWF, DOIM has IT budget for all installation.

Annual Budget:

EOR EXPLANATION	EOR	APPROVED FY04
Personnel	1000	$ 4,633,180.00
Overtime	1100	$ 5,939.00
Travel	2100	$ 133,998.00
Transportation	2200	$ 1,000.00
Rents	2300	$ 544,727.00
Printing	2400	$ 188,342.00
Contracts & MIPRS	2500	$ 6,426,320.00
Supplies	2600	$ 1,184,650.00
Equipment	3100	$ 1,610,250.00
		$ 14,728,406.00

I3MP project completed and accepted April 2003

I3MP Project total cost $14,609,616.73
Army paid $13,336,653.73
ANAD paid $775,963.00

The Installation Information Infrastructure Modernization Program (I3MP) is an Army-wide program designed to upgrade both voice and data communications. The project encompassed installation of fiber optic and copper cable to upgrade and expanded voice and data networks. Data Communications Equipment was also upgraded to support faster network speeds down to the users desktop.

Benefits of I3MP project

74 miles of fiber
Increase from 76 buildings with fiber to 139
100% increase in bandwidth from 10Mb to 1Gb

Advanced Security Capability

Dual-homed. This means that all major network connections have more than one path. If one path is cut, the other path automatically picks up.

Load balancing firewall. This means that we have two firewalls that filters traffic between our local network and the Internet. Load balancing means that they split up the traffic so that one firewall won't be overloaded.

Internal and external Intrusion Detection System (IDS). An intrusion detection system monitors network traffic and sends alerts and warnings to the network administrator on such things as hacker attempts, denial of service attacks, etc. The external IDS monitors traffic between ANAD and the Internet and the internal monitors traffic inside the ANAD network.

Host based intruder detection system. This is the same as above except it monitors the servers instead of the network.

Real time interactive event notification. This means that the system monitors itself and automatically notifies network personnel of problems or things going on at the network level which could turn into a problem.

Integration of IDS and network management systems. This means that all of the network security devices and the network management devices are integrated to work together for more efficient response times, problem resolution, etc.

Multicasting Capability. Multicasting means that the network can be used to transfer voice and video. This means you can use your PC like a video conferencing system. You can also broadcast TV stations, training films, etc.

Real time desktop video conferencing
Broadcasting & teleconference capabilities
Reduction in ISDN lines for teleconference
Commercial television to desktop
Scheduled and on-demand broadcasting
On-line interactive training

15Mb NIPRNET and 5Mb SIPRNET connectivity and support. The NIPRNET is our connection to the Internet and the SIPRNET is our classified connection to the classified Internet.

SDS support for off-site customers to include:
- Blue Grass Army Depot
- Pine Bluff Arsenal
- Rock Island Arsenal
- Watervliet Arsenal

Secure and non-secure Non-tactical radio support via Motorola trunk network

Nortel SL100 Supernode Central Telephone Switch (3176 lines) Host Switch, ISDN switch (579 lines) Bl 97

Nortel SL100 Remote Switching Unit (940 lines), Remote Line Concentrating Module (640 lines) - Bl 96 (East Area)

Directorate of Information Management

BellSouth Smartring for redundant telephone service

15Mb NIPRNET and 5Mb SIPRNET connectivity and support

Outsource contracts:

MTS – Telephone Support $3,472,518.27
RG - Programming Support $2,098,222.00
DynCorp – SDS Program Support $124,878.40
ACS – Computer Room Support $109,138.00

24/7 Telephone Operator service w/on-site operators

Soldier support: Off-netting 9,000 calls per month at no cost to soldiers.

Enterprise wide support software via Computer Associates Unicenter. This is our Enterprise Management System that performs the following functions:

World-wide network view
Centralized software delivery and installation
Automated asset management tools
Universal service desk (Help Desk)

18 Centralized application servers
11 Centralized Web servers
7 Centralized UNIX servers

Ground vs Air Turbines

1. Ground turbines have recuperators.

2. Air turbine mechanics require FAA certification.

3. Ground turbines have gearboxes.

4. Ground turbines require continuous air filtration.

5. The duty cycle is very different; air turbines run a lot more at high power and idle very little.

6. Weight is much more of a concern on air turbines.

7. Vibration input is different for example track induced vibration and ballistic g-loads.

8. Ground turbines have issues like water fording and barrier air filters.

9. Ground turbine fuel controls are somewhat different and don't have an automated start sequence.

10. Ground turbines have battle override valves.

11. These differences result in hardware differences like big castings and electronic controls on ground turbines.

NICHOLS INDUSTRIAL COMPLEX

NORTH

LEGEND:
- = ANAD MAINTENANCE BUILDINGS
- = ANAD SHOP SUPPLY/ADMINISTRATIVE
- = DLA BUILDINGS
- = OCCUPIED BY ANAD PARTNER

BUILDING 420
- BORE SIGHT AND SYNCHRONIZE
- LASER TEST RANGE

BUILDING 414
- STEAM CLEAN

BUILDING 414
- GDLS STRYKER/ FOX VEHICLE PROGRAM

BUILDING 418
- UDLP M113 PARTNERSHIP

ANAD
- VEHICLE FINIAL REPAIR

VEHICLE TEST TRACK

BUILDING 499
- STRYKER PAINT FACILITY

BUILDING 128
- TURBINE ENGINE SHOP
- TRANSMISSION
- MATERIALS LAB

BUILDING 133
- HONEYWELL PROSE FACILITY

BUILDING 146
- FIRE EXTINGUISHERS
- WHITE COMPONENTS

BUILDING 161
- M113 HYDRAULIC PUMP T. S.
- X-200 VALVE BODY T. S.
- X-200 SCAVENGE PUMP T. S.
- FINAL DRIVE CANNING

BUILDING 149
- 1100 HYDROSTATIC STEER UNIT T.S.
- X-200 HYDROSTATIC STEER UNIT T.S.

BUILDING 134
- GDLS STRYKER STORAGE

BUILDING 129
- SMALL ARMS SHOP
- TRANSMISSION SHOP
- TRANSMISSION DYNAMOMETERS
- MACHINE SHOP

BUILDING 226
- TRANSMISSION TEST FACILITY

BUILDING 134
- GDLS FOX MAINTENANCE PROGRAM

BUILDING 229
- TRANSMISSION TEST FACILITY

BUILDING 134
- HONEYWELL RECOUPERATOR MANUFACTURING

BUILDING 184
- COMPONENT WELDING

INDUSTRIAL WASTE TREATMENT PLANT

BUILDING 130
- RECIPROCATING ENGINES
- COMPONENTS
- FINAL DRIVES

BUILDING 410
- ENGINE DYNAMOMETERS
- (M113) TX-100 TRANS
- FINAL DRIVES
- TRANSFER CASES

BUILDING 378
- POWERPACK MATING (ENGINE TO TRANSMISSION)

BUILDING 467
- FULL UP POWER PACK TESTING (GROUND HOP)

BUILDING 398
- ASRS

BUILDING 513
- ASRS

BUILDING 110
- CORPORATION FOR THE PROMOTION OF RIFLE PRACTICE AND FIREARMS SAFETY (MOVING 30 SEP 04)

BUILDING 118
- TMDE

BUILDING 113
- ELECTRONIC/ OPTICAL FIRE CONTROL

BUILDING 434
- VEHICLE WELDING
- COMPONENT WELDING
- BURNOUT
- M88 WINCH T. S.

BUILDING 409
- ABRASIVE/ CHEMICAL CLEANING
- PAINTING
- RADIATOR/OIL COOLER REPAIR/TEST
- CONTAINER REPAIR/ TEST

BUILDING 111
- ELECTRONIC FIRE CONTROL

BUILDING 105
- GDLS GUNNERS PRIMARY SIGHT MANUFACTURING
- HUMAN RESOURCES
- ENGINEERING

BUILDING 114
- ABRASIVE/CHEMICAL CLEANING
- ELECTROPLATING

BUILDING 106
- DIRECTORATE OF PRODUCTION ENGINEERING

BUILDING 145
- CNC/ CONVENTIONAL MACHINING

BUILDING 147
- CNC/ CONVENTIONAL MACHINING
- ROBOTIC/ CONVENTIONAL METALLIZING

BUILDING 413
- CNC/ CONVENTIONAL SHEET METAL SHOP

BUILDING 108
- SHEET METAL
- MACHINING
- ELECTRON BEAM WELDING
- ROBOTIC WELDING

BUILDING 117
- HYDRAULIC SYSTEMS REPAIR
- COMPONENT WELDING

BUILDING 143
- FINAL PAINT
- RECOIL ROOM
- TOWED ARTILLERY
- TURRET/CAB ASSY

BUILDING 421
- VEHICLE WASH RACK
- TOOL CRIB

BUILDING 432
- ABRASIVE CLEANING SPINNER HANGER (HULLS, TURRETS, CABS, ETC.)

BUILDING 433
- ABRASIVE CLEANING
- PAINTING (HULLS,TURRETS, TRANSMISSIONS, CABS,OTHER LARGE ITEMS)

BUILDING 400
- VEHICLE DISASSEMBLY/ ASSEMBLY
- HEAVY MACHINING
- BRIDGE REPAIR

M1 TURRET DEMIL

VEHICLE WATER TEST

DIRECTORATE OF PRODUCTION ENGINEERING
PROCESS MANAGEMENT DIV.
ANNISTON ARMY DEPOT

NICHOLS INDUSTRIAL COMPLEX

DRAWN BY: STAN VAUGHN
DATE: 16 FEB 05 | SCALE: NTS | SHEET 1 OF 1 | DWG. NO. PMD- 426

Happy 50th to building that saves soldiers' lives

By Matthew Korade
Star Senior Writer
01-22-2004

In the beginning, the Anniston Army Depot's Building 400 was just an empty field. But soon a steel and concrete hangar took shape.

When it was completed in 1953, the building stood long and tall enough to land a plane in.

Wednesday, local and military officials gathered to wish the combat vehicle facility a happy 50th birthday.

Charles Harper, a 25-year employee at the Anniston Army Depot, looks at a photo board commemorating the 50th anniversary of the combat vehicle facility. Photo: Stephen Gross/The Anniston Star

"That passion that's in this work force is evident in everything that you do," said Maj. Gen. N. Ross Thompson, commanding general of Tank-automotive and Armaments Command, which oversees the depot.

Thompson was only six months old when the overhauling center was built, he said. Then, as today, production lines stretched from one end of the building to the other. In that time, it put its mark on every tracked vehicle in the Army and many of those of other services. When a vehicle comes through, it leaves better than new, he said, quality work that enjoys a wide reputation in the Department of Defense.

With that, he thanked the workers, "because you realize more than anybody that the lives of the war-fighters are literally in your hands."

At five acres, the building offered plenty of room to shelter the guests. More than 500 current and former depot workers and the two-star general gathered together with chamber of commerce and Calhoun County commissioners to see the reflective ceremony through. They cut a cake with a dress saber and munched on tank-shaped sugar cookies as "Yankee Doodle Dandy" and "Appalachian Spring" played through a pair of speakers.

Officials hope the vital work of the facility will save the depot from the upcoming round of base closings in 2005.

The building's value to the community could be measured in the number who came for the celebration and in the pride they shared in the work being done there. They were men and women who spent their lives under its roof and worked alongside their children, who wore white overalls with "buy war bonds" written on the legs. Now they wear blue jumpsuits.

Happy 50th to building that saves soldiers' lives - Continued

Many of the faces from the past reappeared in the crowd Wednesday. They looked nice in their suit jackets and furs. But it wasn't cold.

The Department of Defense has made $6 million in renovations to the facility, which in 1953 cost $4.5 million to build and equip. In the 1980s, a new floor arrived, as shiny and smooth as an ice rink. In the 1990s, ventilation was installed, orange hoses snaking down from window fans to suck out the fumes.

It's also cleaner, although many of the 450 workers wear bandanas or other hair coverings. Mostly that's to keep sweat off the floor and out of the machinery.

Today, the building and its more than 228 pieces of equipment are valued at more than $21 million.

"It's great," said Kenneth Pressley, 47, who keeps track of all the parts going in and out of the building. "I hope there's 50 more."

Jeanie Strickland, a former parts keeper who now directs family activities at the depot, said it's been seven or eight years since she had been back to the building.

"It really is interesting, it's kind of nice," she said.

"We still do the same job, we still work on the tanks, we still make sure what our soldiers get is the best quality possible, because it's someone's child out there, or their father, or their mother," Strickland said.

The building has seen its share of hardships – and so have its workers.

In winter, with tanks continually coming in and going out, it was so cold they wore long-johns under their clothes.

Summers were even worse.

Workers had to take 15-minute "heat breaks" every hour, said Levi Lyles Jr., who has worked at the depot for 25 years.

Lyles, 50, was a parts keeper there, but now he works in the building next door. He used to call Building 400 "the Titanic."

"Because it's long," he said.

"It's been a great place to work," Lyles said. "Paid a lot of bills, done a lot of things."

W.K. "Bud" Summers was chief of the shops division from 1965-1975.

Happy 50th to building that saves soldiers' lives - Continued

"In the Vietnam War, we were producing, overhauling five tanks a day," he said. That was when there were 2,300 depot employees. Because of partnerships with private contractors there are fewer today.

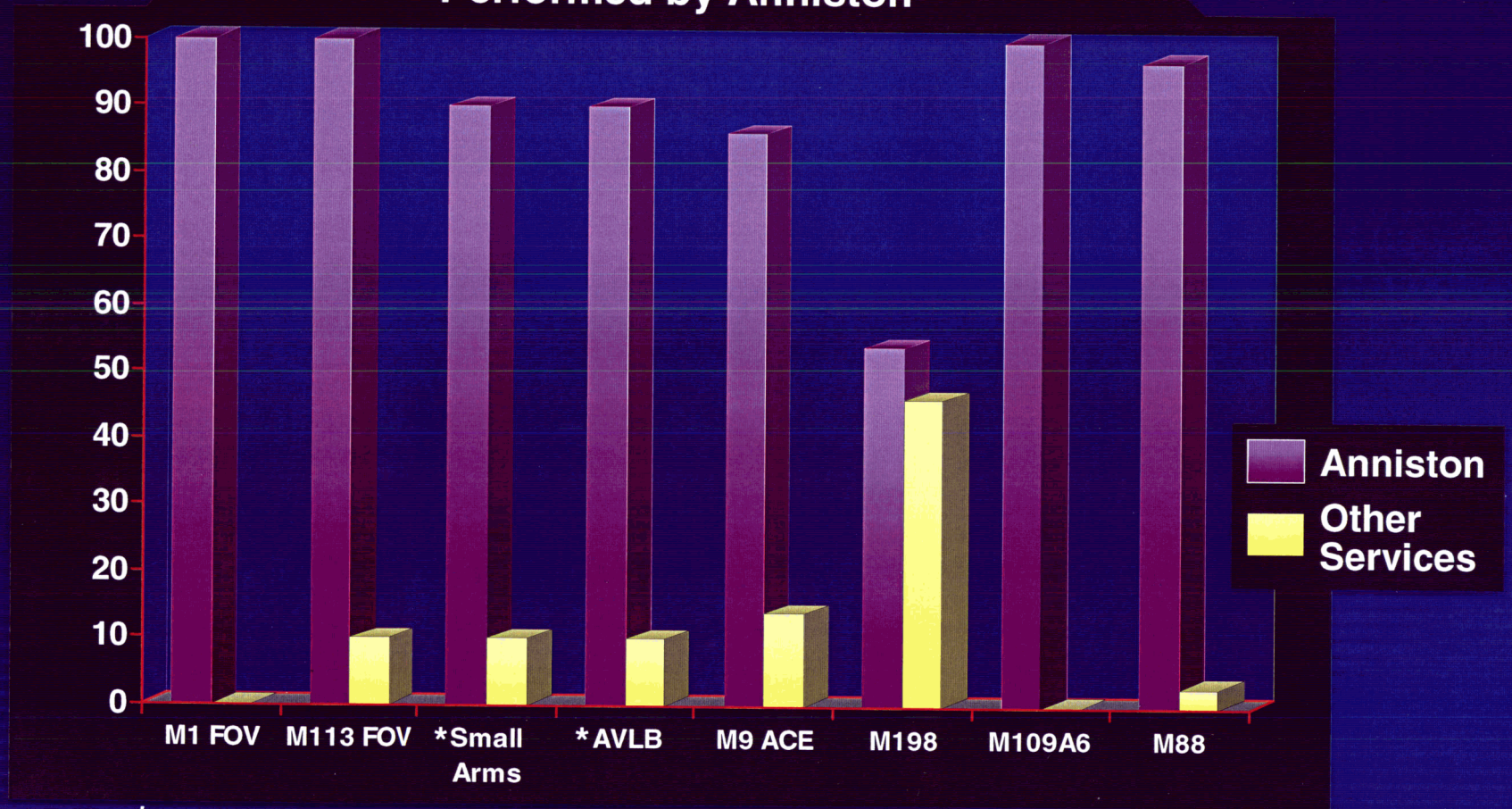
Col. Gerald Bates, the depot commander, said the improvements to the building show a commitment to Anniston.

"I think the Defense Department realizes the critical role that Anniston Army Depot plays in national defense and that it must continue to reinvest in its infrastructure," he said.

As one visitor put it, Building 400 is where America goes when it wants to go to war.

In an hour, the ceremony was over. As the golden bunches of balloons hung in the air, the machinery rumbled to life.

Joint Warfighter Support

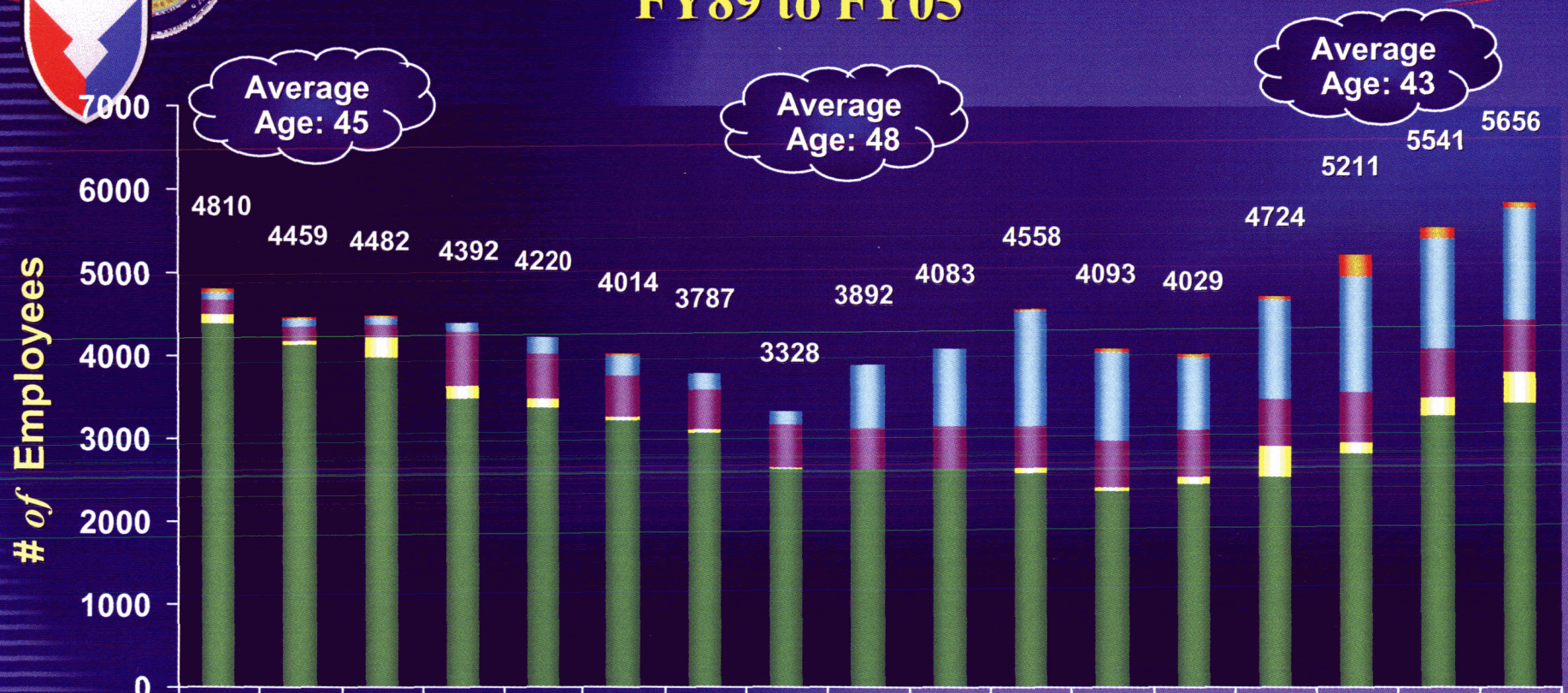


*Information for Small Arms & AVLB is Notional - Actual Data is Being Obtained

JOINT SERVICE SUPPORT

On-Board Strength History

FY89 to FY05



	FY89	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Military	51	35	28	9	9	10	9	4	3	3	4	60	57	57	246	129	51
Contractor	90	84	89	109	185	239	198	159	754	937	1405	1044	871	1181	1409	1326	1367
Tenant	178	167	157	634	542	501	468	504	499	504	503	567	556	568	603	586	629
Temporary	108	45	229	160	118	46	42	40	11	13	67	62	86	373	131	212	371
Permanent	4383	4128	3979	3480	3366	3218	3070	2621	2625	2626	2579	2360	2459	2545	2822	3288	3426

As of 31 May 05

Avg. Age ANAD Only