



July 20, 2005

Ms. Elizabeth Bieri  
Army Analyst  
Defense Base Realignment and Closure Commission  
2521 South Clark Street, Suite 600  
Arlington, VA 22202

Dear Ms. Bieri,

We really appreciate the time that you and Don Manuel spent with us last week to help us better understand the BRAC process and our appropriate role as a community in support of our installation, Anniston Army Depot. At the meeting, we and the staff members from the respective offices of our Senators, Congressman and Governor promised to provide the following follow-on documents:

- 1.) An Economic Analysis (EA) on the Rubber Facility
- 2.) A White Paper Comparing Work on the Bradley Transmission to that of Other Combat Vehicle Transmissions
- 3.) Form 1391 Showing Anticipated Costs of Relocating the Rubber Facility

When we requested assistance from the Depot in obtaining certain documents, they noted that documents prepared by installations, such as 1391's and EA's relating to the BRAC process, should be released through official channels at AMC or TACOM, rather than directly to the community. I am sure that AMC or TACOM would be more than happy to provide those documents at your request as a BRAC analyst.

From what I understand, the EA includes analysis of 4 options: (1) Maintaining the Status Quo, (2) Enclaving in Place at RRAD under ANAD Command and Control, (3) Constructing and Operating a Rubber Plant at ANAD, and (4) Leasing a Facility Off-depot at ANAD. Also, from what I understand, Options 1 and 4 are not considered viable and number 3 was actually less costly than option 2.

The 1391 on the rubber facility, also available via a request from AMC/TACOM, will show the MILCON cost to be \$29.5 M in comparison to the previous 1391 where the cost was \$47. The first shows site preparation and utility costs as a part of the rubber plant construction when those costs are also applicable to other construction projects and future projects and therefore should not have been included.

DCN 5860

I am including a brief comparison of transmissions, relying on my own experience as a past Deputy Commander of ANAD. Also, I have included a photograph of the ANAD Transmission Repair Shop. Since these items are provided by the community and not generated by the Depot, we are happy to make them available. You may wish to request a photograph from RRAD in order to see the difference in the levels of sophistication of the transmission repair processes.

If we may provide more information that would enable you to gain the information you need, please feel free to call Nathan Hill, Military Liaison, or Sherri Summers, President at 256-237-3536 or e-mail us at [nathanh@calhouchamber.com](mailto:nathanh@calhouchamber.com) or [sherris@calhouchamber.com](mailto:sherris@calhouchamber.com).

Thank you for your service and for the professional way in which you conduct this important process.

Respectfully Yours,

Nathan Hill  
Military Liaison

Enclosure  
Copies:

Ms. Laura Friedel, Office of U.S. Senator Richard Shelby  
Mr. Archie Galloway, Office of U.S. Senator Jeff Sessions  
Ms. Molly Dittmer, Office of Congressman Mike Rogers  
Mr. Jim Walker, Director of Homeland Security, State of Alabama  
Ms. CeCe Siracuse, Hurt, Norton and Associates

**Anniston Army Depot (ANAD)  
Bradley HMPT 500 Transmission Overhaul Capability**

**Experience:**

ANAD overhauls a wide variety of transmissions as shown below. In fact, Anniston is currently overhauling 5 different cross-drive and 2 in-line transmission models. Two of these are the X-1100, used in the M1 Abrams, and the X-200 transmission, used in the M113A3. Both are very sophisticated transmissions. They are as complex if not more complex as the HMPT-500, which is used in both the Bradley and MLRS vehicles.

<u>Transmission</u>	<u>Vehicle</u>	<u>Type</u>
X-1100	M1A1/M1A2	cross-drive
XTG-411	Paladin/FAASV	cross-drive
XT-1410	M88A1/A2	cross-drive
X-200	M113A3	cross-drive
CD-850	AVLB	cross-drive
M9 xsmn	M9 ACE	in-line
TX-100	M113A2	in-line

**General:**

The requirements to overhaul a HMPT 500 transmission are not as difficult as those of the X-1100 transmission, used in M1A1/A2 vehicles, nor as sophisticated as the X-200, used in M113A3 vehicles. Both of these transmissions are electronically controlled and utilize hydrostatic pump and motor assemblies as steer units. Anniston's experience with these and other transmissions will enable transfer of the HMPT-500 mission seamlessly and no impact to readiness.

**Skills required and availability at ANAD:**

**Mechanics:** Only trained, qualified mechanics are assigned to transmission overhaul. A CO-OP school with applicable training is established and in full operation at ANAD to supply these personnel as needed. The skills required to overhaul the X-1100 and X-200 transmissions are the same skills required to overhaul the HMPT-500 transmission.

**Engineering:** Anniston has a large and well-trained engineering staff. Mechanical Engineers are assigned to the transmission shop and testing centers. Electrical, Chemical and Civil Engineers support them for the establishment and control of production processes. The skills required to support ANAD's current transmission workload are the same type required to support the overhaul processes used for the HMPT-500.

**Technicians:** Anniston uses qualified & certified technicians to perform work such as X-ray, coordinate measuring, plating, metalizing, CNC programming, and building test fixtures. These same type skills will support the HMPT-500 mission.

Machinist: Several labor grades are established at ANAD to distinguish the capabilities required for various work assignments. Skills available range from simple drill press operation to fabricating the most complex testing device and setting up and operating CNC machines. Training of machinists is also performed at the ANAD CO-OP School.

### **Facilities required:**

The same type facilities now in use at ANAD to support current transmission workload will be used to support the HMPT-500 mission. These will be clean climate-controlled rooms. The specialized test equipment currently used at Red River to include the dynamometer test stands will be moved and installed in these facilities.

### **Overhaul Processes:**

The overhaul processes used on these transmissions are very similar. All of them follow the same basic overhaul process:

**Disassembly:** The first steps are transmission disassembly and inspection. Special tools and expertise exists for visual examination and measuring of parts for conformance to Depot Maintenance Work Requirements (DMWR) or drawing requirements. For extreme exacting measurements, coordinate measuring machines are used.

**Processes (cleaning, plating, welding etc.):** Steam cleaning, abrasive blast, cleaning solvent (PD 850), compressed air, phosphate coating, cadmium and chrome plating, anodic coating, zinc and nickel plating are all common processes used in overhaul of other transmissions. Shrink fit of parts for assembly using heat to expand and freezer or liquid nitrogen or dry ice for contraction is used throughout. Reclamation or repair of parts through welding, metalizing, plating and re-machining are also common in transmission work. Milling, drilling, broaching and other machine shop practices are so common that such work is assigned to a machining center attached to the transmission centers.

**Assembly and testing:** Use of fixturing and work assistance devices is common on all transmissions. Component parts are inspected utilizing precision measuring equipment. Acceptance testing of intermediate assemblies such as valve bodies, hydraulic assemblies and pumps is mandated for all transmissions to insure a high quality, reliable product. Anniston utilizes specialized test equipment (STE) on the X-1100 and X-200 transmission programs that are as sophisticated as those used on the HMPT-500.

<u>ANAD STE</u>	<u>Transmission</u>
Valve Body Test Stand	X-1100
Internal Valve Test Stand	X-1100
Oil Pump Test Stand	X-1100
Hydrostatic Steering Unit Test Stand	X-1100
Valve Body Test Stand	X-200
Pump Test Stand	X-200
Steering Unit Test Stand	X-200

DCN 5860  
**Final Testing:**

Each transmission is submitted to exacting dynamometer testing to specifications that duplicate vehicle demands. ANAD has 11 transmission dynamometer stands and can test virtually any transmission in the Army inventory. These stands are very similar to the two stands Red River uses to test the HPMT-500.

**Ball Boring and Matching Process:**

Finally, to answer one last concern, the ball boring and matching process will not be any more difficult to relocate than any other process that will be moved. Anniston has years of experience with working with high precision parts and equipment. The ball bore and matching process is basically a high precision measurement instrument. It is no more complicated than what is currently being done with the four coordinate measuring machines in Anniston's turbine engine and CNC machine shop gage labs.

