The Super Pershing M26A1E2 Tank Arrives (págs 134-137)

A large steel-fabricating shop and machine shop next to the power plant apparently had made a great deal of the plant's processing equipment. Company C maintenance took over these shops for their extensive paved areas and covered work space.

Major Arrington assigned me a special project. A graduate engineer, Arrington had run his own fabricating and machine shop business in Brookhaven, Mississippi, before entering the army. As I entered his shop trailer, he was sitting at his desk with his feet propped up. I could detect a glint in his eye. He kind of half winked at Sergeant Wacowski, then addressed me in a slow drawl.

"Cooper, you've been talking big and strong about what a naval architect you are and about how you calculate the center of gravity on ships. I know damn well you're the only officer here with the audacity to keep a slide rule in your Jeep locker. Well, you're gonna have a chance to show how sharp you are."

Arrington had a perceptive mind, but he liked to generate a laid-back Southern attitude to show that he had just enough good ol' boy in him to have a good sense of humor and at the same time snap back like a steel trap to make sure you stayed on the ball. He told me to sit down, and we got into some serious talking. He explained that we were to be issued a single new Super M26 Pershing, the only tank of this type to be shipped to the European theater. The tank had a new experimental 90mm T15E1 high-velocity gun, seventy calibres (the length divided by the diameter) long. The larger the caliber, the longer the barrel, which gives the propellant charge explosion more time to expand against the base of the projectile and results in a higher velocity. With new special ammunition, this gun could produce a muzzle velocity of 3,850 feet per second, some 600 feet per second greater than the 88mm KwK43 gun mounted on the German PzKw VIb King Tiger.

Army ordnance was interested in getting the new tank into combat, hoping to match it against the King Tiger. Having already lost several of the new M26s to high-velocity German antitank guns, we knew that its armor was still inferior to that of the Mark VI Tiger. My job was to design and install additional armor on the new tank.

The well-equipped German fabricating shop contained several large pieces of inch-and-a-half boiler plate. We decided to use a laminated design for the glacis plate. We cut two pieces of the boiler plate and fashioned a V shape to fit over the V shape of the glacis plate and the lower front plate. The top glacis plate was set at thirty-eight degrees from the horizontal, which gave fifty-two degrees from the vertical and was considered to be the critical angle to generate a ricochet. This gave an air gap of zero at the top and approximately three inches at the knuckle, where the bottom front plate came in contact.

A second boiler plate was cut in a similar fashion and set at a thirty-degree angle extending out over the first plate. Where it came in contact with the bottom plate, it left a gap of seven to eight inches. We wound up with four inches of cast armor on the original glacis plate and two inch-and-a-half pieces of boiler plate with an air gap in between. We thought that even though the boiler plate was softer, the lamination and the lowered angle of incidence would help German projectiles ricochet. The new armor added about five tons to the front of the tank. A ruler was used to measure how much this would deflect the forward torsion arm bogey wheels.

We then cut a section from the faceplate of a knocked-out German Panther and trimmed it to three and a half inches thick by five feet long by two feet wide. We cut a large hole in the middle to accommodate the gun tube and two smaller holes on each side to accommodate the coaxial machine gun and the telescopic site. We slipped this plate over the gun barrel, brought it down against the mantlet, and welded it firmly all the way around. With its center of gravity fourteen inches forward of the centerline of the trunnion, this plate, which weighed fourteen hundred pounds, made the gun barrel considerably heavier on the front end.

The Super M26 Pershing already had overhead equilibrator springs attached to the turret and to the original gun mantlet, which were supposed to offset the extra length of the barrel. But the weight we had added overcame the strength of the equilibrator springs, and the gun barrel sagged forward. The mechanical gear reduction inside the turret, used to raise and lower the barrel, was insufficient to overcome this weight.

To compensate, we took two pieces of inch-and-a-half boiler plate and cut some odd-looking counterweights approximately three and a half feet long, starting one foot wide for about the first eighteen inches, then flaring to approximately two feet wide for the next twenty-four inches. We welded the narrow ends to the sides of the Panther mantlet and let them extend back horizontally and flaire out slightly to miss the turret. This put the heavier section on the back side of the trunnion, thus giving a counterweight effect. These counterweights helped, although it was still difficult for the gunner to raise the gun with a mechanical elevating mechanism.

It was obvious that additional weight should be added to these counterweights, but the question was how much and where. From my limited knowledge of engineering mechanics, I knew that this would require a lengthy calculation, and the information and time were not available. This was what the major had in mind when he'd made the snide remark about my slide rule.

We decided to use an empirical method. We took some inch-and-a-half plates about one foot wide and two feet long and attached them to the rear of the large counterweights with C-clamps. By moving these weights back and forth, by trial and error we finally reached a balance point where the gun was easy to raise and lower manually. Then we welded the plates into position.

With the gun barrel rotated forward, the tank looked like a raging, charging bull elephant. The long gun stuck out like a trunk; the big, bulbous counterweights stood out like ears; and the holes in the gun mantlet for the telescopic site and the machine gun looked like eyes. We hoped it would make the same impression on the Germans.

The turret had already been modified with a counterweight on the back to compensate for the long gun. We added more counterweight to compensate. Otherwise, when the tank was on a slope, it would be difficult to traverse the turret even with a power traverse. We had noted this problem with the German Panther. If it was on a decided slope and the gun was swinging downhill, it took a long time for the German gunner to rotate the turret forward with its manual traverse.

We had now added seven tons to the tank. We checked our ground distances again and found that the bogey wheels were deflecting down an additional two inches. This caused the rear of the tank to cock up like a wild drake in heat. In spite of its odd appearance, and the fact that we had probably slowed it down about five miles an hour, the tank, with its 550-horse-power motor, still had plenty of power.

Next, we road-tested the tank, then drove it to the edge of the vobridge to test-fire the gun. We looked around for a suitable target and finally found a knocked-out German Jagdpanzer IV assault gun that had been hit by a single shot to the flank and had not burned. We hooked it up to one of our wreckers and dragged it to the other side of the vobridge, on the first level about fifty feet below the crest. The Jagdpanzer was positioned with the forward glacis plate facing us. The distance to our target was approximately a mile and a half.

The ammunition for the 90mm T15E1 gun was a standard 90mm round, but the cartridge case was longer to accommodate a larger propellant charge. Initially, we used two men to load the round into the tube. However, after a little more experience, one man could do it, albeit with some difficulty. There were bound to be some problems with an experimental tank.

Major Dick Johnson sent over the crew from the 33d Armored Regiment to operate this tank. We wound up instructing them at the same time we were learning ourselves. An artillery maintenance sergeant in charge of

the firing had previously bore-sighted the gun, so we were ready to fire. I made sure that everybody stood back to the sides and rear of the tank to give the blast cone adequate clearance.

Anyone standing behind an M4 Sherman could see the projectile go out and curve down slightly as it sped toward the target. This new high-velocity gun was entirely different. When we fired the first round, we could barely see the projectile. It appeared to rise slightly as it struck the target. This was an optical illusion, but the effect was awesome. When it hit the target, sparks shot about sixty feet into the air, as though a giant grinding wheel had hit a piece of metal.

When we looked at the target, I was dumbfounded. The 90mm projectile penetrated four inches of armor; went through a five-inch final drive differential shaft, the fighting compartment, and the rear partition of the fighting compartment; penetrated the four-and-a-half-inch crankshaft of the Maybach engine and the one-inch rear armor plate; and dug itself into the ground so deep that we could not locate it. Although we had been told by the ordnance officers from Aberdeen that the tank gun could penetrate thirteen inches of armor at a hundred yards, it was still difficult to believe this awesome power. We all realized that we had a weapon that could blast the hell out of even the most powerful German Mark VI Tiger.

We instructed the new crew on the use of the gun and let each man fire it. We explained that the special ammunition was longer and more difficult to load and that the extra armor would make the tank more difficult to steer; however, with a little experience they could work this out. Although the tank had extra armor, they were not to expose it foolishly. The objective was to get into combat under the best conditions and see what it could do against German armor.

The crew was so glad to get this tank that the men were willing to suffer any inconvenience. I'm sure they felt that the tank, supposedly the most powerful of any in the American, German, or Russian armies, increased their chances of survival.

I told Major Johnson that he ought to have his crew watch this tank closely, particularly the final drive and track system and the engine, because the seven extra tons of armor might eventually cause some maintenance problems. In spite of this, I felt that the tank should be able to perform its mission.