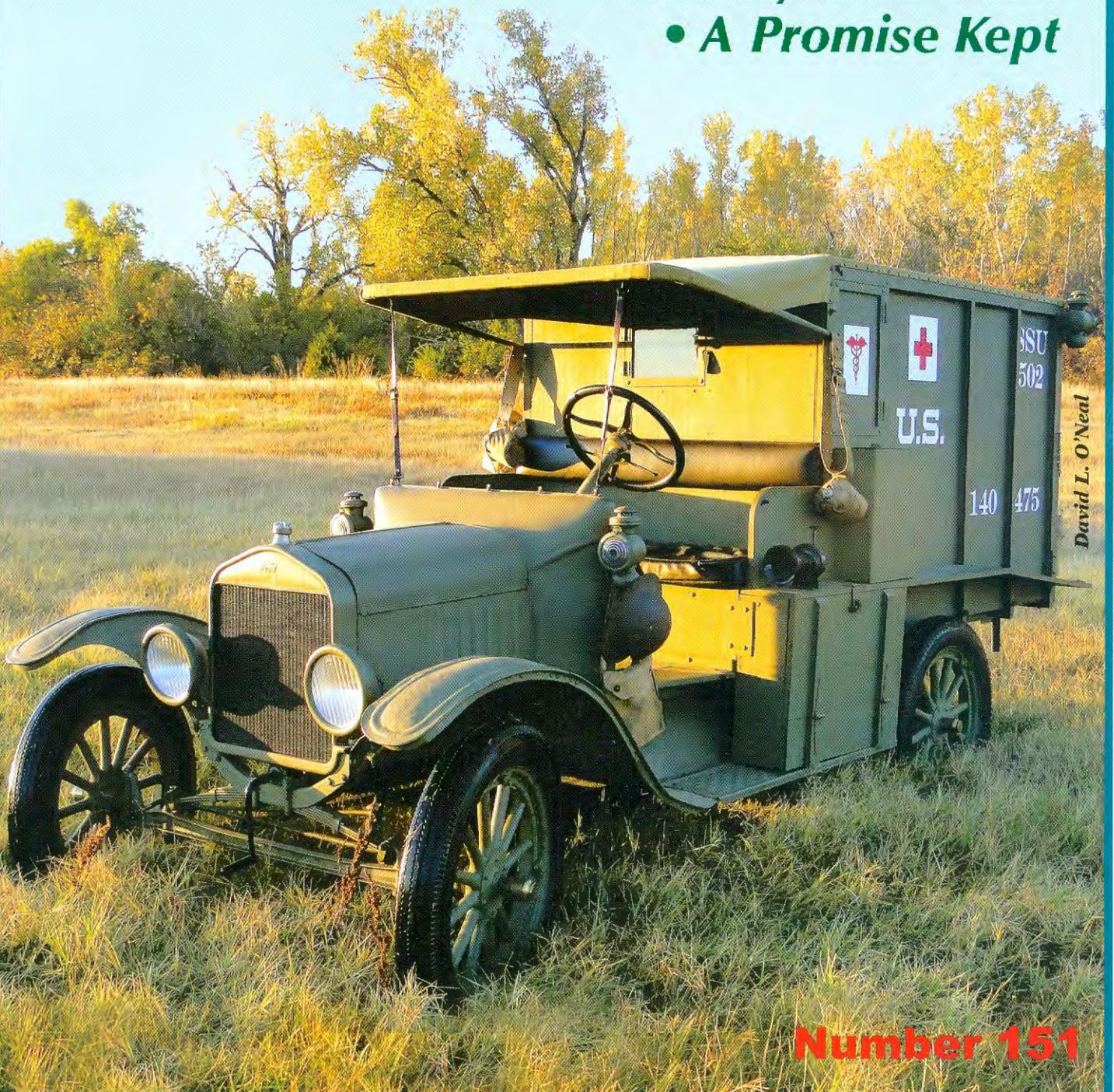


# ARMY MOTORS

Journal of the Military Vehicle Preservation Association

- *Ghost of the Great War*
- *The Bayeux Parade*
- *A Promise Kept*



Number 151



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**Postmaster**, Send address changes to **ARMY MOTORS**, P. O. Box 520378, Independence, Missouri, U.S.A. 64052-0378.

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# ARMY MOTORS

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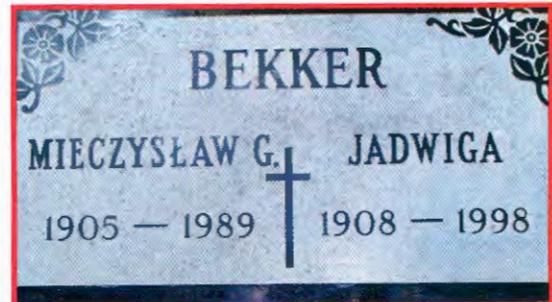
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**MVPA - An International Organization Dedicated to the Preservation of Historic Military Vehicles**

*A Snow Story*, by Ed Storey.  
 Part 1: We learn about the study of snow removal methods in Europe in the late 30s, and a Canadian mission, in 1947, to find and study the results.

We meet an amazing Polish/Canadian Lt. Col. whose career took him from those cold Canadian winters to sunny California and the U.S. Space Program – Meet Doctor of Engineering, Mieczyslaw Gregory Bekker, a modern Renaissance man! Thanks to Herman Pfauter, Santa Barbara, California for locating Bekker's grave. The article begins on page 54.



### Front Cover:

David L. O'Neal's M1917 US Army WWI Ford ambulance.  
 Story and photos on page 13.

### Inside Cover:

General Patton's armored car replicated.  
 The story begins on page 2.



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 ARMY MOTORS e-mail: [armymotors@shaw.ca](mailto:armymotors@shaw.ca)

# General Patton *and his* M20 Armored Car **A Promise Kept**

By Denny Hair #9986, Hockley, Texas

Gary and Linda Haas of Burleson, Texas, are long time members of the MVPA. In 1988, Gary bought a Ford M20 armored car that had seen better days. The previous owner had little or no use for its military history and had modified the body, to try and make some sort of recreational vehicle. This did not sit well with Gary or Linda, so they purchased it with the idea of restoring it.

Gary did considerable work on it including the long process of acquiring all the missing parts. Twenty-five years ago, parts were easier to find - well most of them anyway. Time passed and Gary's collection grew. The M20 was always part of his MV family, but like all of us, more pressing projects were put ahead of it.

An M20 has many small spaces inside, and it became difficult to maneuver around in, to get the result that he wanted. Rather than continue, he looked around for a good home for it. Instead of trying to sell it for profit, he looked for someone who would complete the work.

At that time, I was looking for an M20 to restore, to look like General Patton's, circa 1944. Gary and I met to see if something like this was possible. Bill White, new to the MVPA, and part of Patton's Third Army Living Historians, was excited about getting into a project. Both Bill and I, along with an entourage that included Carlos Manning, Claude Vaughn and Ken Stewart proceeded to Burleson, Texas where a deal was made. We promised Gary and Linda that we would not part it out or buy it to sell. Gary knew of our intention to restore it as a replica of General Patton's M20 Armored car. The agreement was made, the journey began and we started the long process of restoration.

Gary was very pleased that we would continue his work, to restore it and use it in our Patton and his Third Army Living Historians group, as part of our educational program. Bill White and I received help from our many volunteers, who gave up holidays and weekends.

When Ray Marino, one of our members, moved to

Texas, he became the third part of our work trio. Along the way, Michael Maloney, Ken Stewart, Will Huntington and Michael Ditto came by to lend a helping hand.



Left side view of the M20 when Gary and Linda Haas said goodbye to the project and turned it over to Denny Hair. They had lovingly brought it back from the junkyard to this point.



## General Patton inspects his M-20 for the first time. April 1944.

In April 1944 Patton inspected his new M20 with Willie, his dog, and Lady Leese looking on. The proximity gages were installed to act as a sort of curb feelers for depth perception. The original ring mount is shown in this photograph.



### **GENERAL PATTON'S M20 ARMORED CAR**

General Patton was a flamboyant commanding officer and one of the most skilled military tacticians the United States produced. General Eisenhower assigned Patton to command the Third United States Army in February of 1944, but it was kept secret from everyone but the two of them and General George Marshall, Army Chief of Staff, but that is another story.

As Patton assembled his beloved Third Army in England, he also assembled his personal motor pool. In early 1944, Patton chose two jeeps, a Dodge WC 56 Command Car, a Packard sedan, a GMC CCKW Mobile command headquarters van, and an M20 Armored car.

Not long after assuming command, Patton adopted his beloved Willie, an English Bull Terrier, and both Willie and Patton inspected his newly acquired M20 for the first time.

In April 1944 at Peover, Cheshire, England - Patton's headquarters - his armored car was first delivered to him. He brought Willie to help him inspect it. Lady Leese, wife of Lt. General Oliver Leese, Commander of the 8th British Army, was there, as she had helped Patton find Willie and wanted to watch the General and his new companion inspect the M20.

The vehicle had an interesting feature not seen on any other. Near the front, attached to the outside of the fenders, were two long feeler gauges, made of metal with a round flat indicator painted white. These were used by a number of countries, including the axis powers, to assist driver's depth perception. With the addition of the US 3rd Army flags and rank recognition plate, these feelers became visually important. The driver needed to be able to see around them, as there is a very narrow line of sight. They were necessary to judge the distance from the fenders to obstacles. They were not common on US Army

Patton's M20 as it was recreated.

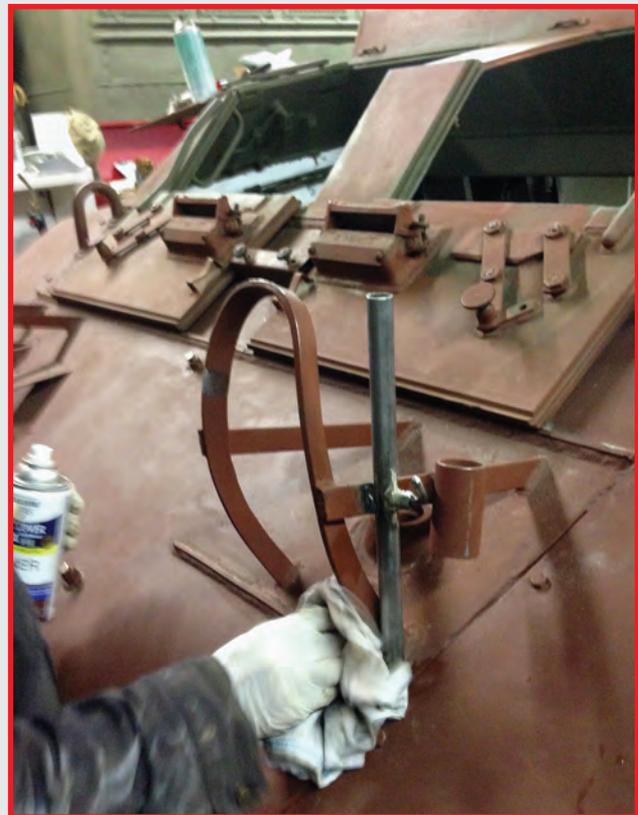


vehicles but Patton was always experimenting and trying out different ideas.

The first written indication of Patton's use of his armored car came on 04 August 1944. Col. Charles Codman, aide de camp to Patton, wrote home about this day and said, "Al (Major Alexander Stiller, aide de camp) led off in the armored car and I rode with the General in his peep. For the next three hours we pursued the US 6th Armored up the Brest peninsula. Soon we were well ahead of our own infantry and I found myself sympathizing with the division commander's concern in regard to his flanks and rear."

During the time of August 1st through August 8th, General Patton used his M20 to literally race through the different roads to meet with his various commands. The M20, powered by a Hercules JXD 6-cylinder gas engine was capable of 57 miles per an hour (92 km/h), which was unheard of at the time. Patton would certainly have seen just how fast he could get it to go.

His approach could be heard for miles down those dusty August roads, as his M20 was equipped with duel air horns made by Buell Air Horn Company. They were made of brass, but painted OD and the bell was the same as the trombones of the period. The horns, coupled with the siren made an unmistakable



The metal flag mounts were reproduced to the exact size based on the Photoshop images superimposed over the M20.



Patton added a windshield and we verified the exact dimensions using Photoshop. Using the original images we photographed our M20 in the same position. To ensure we had it right, we then superimposed the original photo over that of our M 20.

announcement that General Patton was coming to the front. In fact, during August 1944, Patton had his Third Army's three corps attacking in three different directions at once. He found the stamina to not only visit the corps headquarters but almost all the front lines - all of this within the first eight days of August 1944.

In what would develop into the Falaise Pocket, Patton set the stage for the envelopment of a German Army. Lt. Col. Jack Widmer, one of Patton's headquarters staff quoted Patton: "I've not much word from higher headquarters but I am not waiting. I've ordered the 79th Infantry and the 5th Armored to Mantes on the Seine. This should come close to bottling up an entire German Army..." The old man pulled out of his headquarters in his armored car and went dashing to the Seine."

Patton added a makeshift windshield to allow him to stand behind it see out without wearing his goggles, as moving fast down dusty roads can cause the eyes to become irritated.

Patton continued to use his M20 in combination with his jeep, command car and L5 Reconnaissance plane, as his Army corps spread out further and further. In November the weather turned from wet and cooler to mud, freezing rain and some snow.

### **MONDAY 27 NOVEMBER 1944**

Patton received a call from General Eisenhower who wanted him to take Averell Harriman, the US Ambassador to Russia, to the front lines for a few hours. The weather was cold and wet so Patton had



We colorized an original black and white image of Patton. Averill Harriman, the US Ambassador to Russia, is shown visiting the US 4th Armored Division. Eisenhower requested Patton to show Harriman the front lines.

Top, left to right; Averill Harriman, accompanied by Lt. Colonel Gault (aide to Eisenhower) with Patton. Bottom left; unknown assistant driver, and Sgt. John Mims, Patton's driver through the war. (Photo Library of Congress: Patton Papers caption - Patton's diary Monday November 27, 1944.)

his men fire up his M20. By then it had been modified somewhat by removing the ring mount, which caused what little room there was to be very cramped. In its place went a post mount for the .50 machine gun.

Patton accompanied Harriman as they drove through mud, rain and snow to the front lines and to the headquarters command of the US 4th Armored Division. The removal of the ring mount offered more valuable space but the protection lost caused the shooter to be exposed more than Patton thought prudent.

Right side of the M20. Patton is holding the .50 cal. M2 machine gun. He had the mount for the gun relocated from the ring mount to a floor post mount. This provided better cover but less room inside the tub.



On 27 November 1944, Patton took Averill Harriman, the US Ambassador to the Soviet Union, in the M20, through mud, rain and snow on the way to the front, in order to visit with the US 4th Armored Division. (Photo credit: Patton Museum and Library of Congress Patton Papers)

Harriman told me that Stalin had praised the Third Army in the highest terms of which he is capable, when he said to Harriman, in the presence of the chief of staff of the Red Army that,

the Red Army could not have conceived and certainly could not have executed, the advance of Third Army across France.”

“Harriman says that Stalin is a strong, ruthless revolutionist and therefore a very potential threat to future world conditions. He says that discipline in the Red Army is the most rigid and ruthless he has ever seen, and that the officer caste is a new nobility. This is a strange result of communism. I think he had a very pleasant time.”

(Patton, George S, George S. Patton Papers; Manuscript Division, Library of Congress, Washington, D.C. Patton Diary 1943-1945 BOX 3 Annotated transcripts Diary entry November 27, 1944.)

### **PATTON WROTE IN HIS DIARY:**

“Averill Harriman, Ambassador to Russia, accompanied by Lt. Colonel Gault, Aide to Eisenhower, arrived at 1010. Eisenhower had called to ask me to see that Harriman saw the worst flood conditions. We crossed four tank ditches and innumerable lines of trenches, all of which had been captured by our men. Arriving at the 4th Armored we crossed the Saar River. The ground was as bad as it could be – practically all the meadows looked like lakes. We then visited the 26th Division and in returning home passed over one of our tank battlefields. At one point we came on a place where one of our M4 had put out five German Mark V’s.



The M20s first night in our shop, lots of work to do. Many parts had to be made, restored or located. We had it all to do and that was both the work and the fun.

that helped us identify missing items on ours.

The MVPA was also a tremendous help, as the articles in *Army Motors* and the parts lists from *Supply Line* vendors helped immensely.

If you have ever been down inside an M20 driver's or assistant driver's compartment you know how truly small they are by today's

### **BETTER THAN A YEAR OF WORK WOULD LIE AHEAD:**

Restoring a M20, seventy plus years after it was manufactured is a tough job. Gary Haas did the hard work in the late 1980s and '90s. He saved it, got it's running gear repaired and restored, reworked the engine, brakes and wired the engine. He repaired the armor, and found many of the parts before they dried up.

The long educational process as to what the M20 needed began. Photographs were gathered from the Patton Papers at the Library on Congress and the Patton Museum of Leadership at Fort Knox. These proved invaluable in the restoration. They were studied intently and together with the written research, the project commenced.

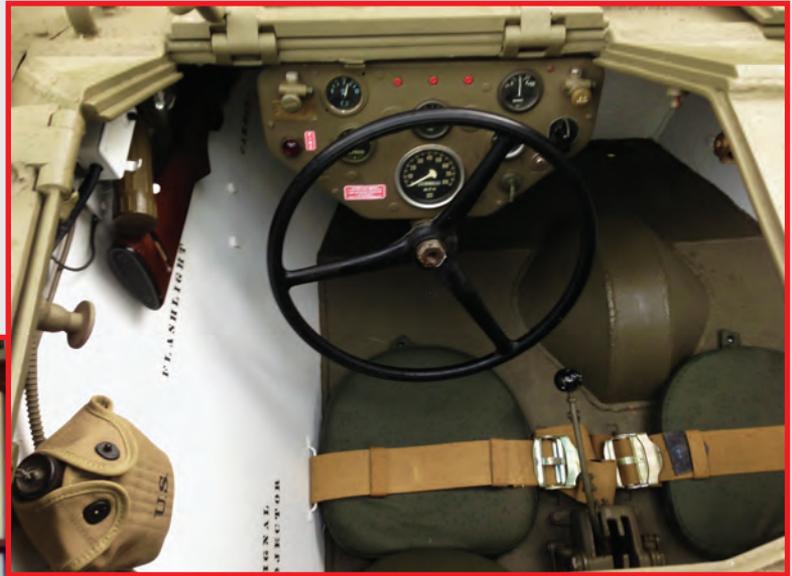
We needed to learn the ins and outs of an M20 armored car. We were fortunate to be able to visit with Paul Vien, whose M20 won first place at an MVPA convention. His is truly a masterpiece of restoration and may be one of the better restored M20s in the world. Paul was gracious enough to allow us to inspect it and take photographs

standards. If you weigh over 200 pounds or are taller than 5' 8", which most of us are, you know how hard it is to work in such a confined space. You work upside down, on your back, with your head lower than your waist. Welding, wiring, painting, stenciling and getting in and out will wear you down. Once the seats were reinstalled we often got stuck between them. If you have an M8 or M20, or have driven one, I know you can relate to this.



Denny Hair examines the wiring harness connections in a tight space. Getting stuck in the M20 happened frequently during the restoration because the vehicle was designed for a smaller generation of men.

The wiring harness was toast. Bill White, an electrical draftsman and skilled writing expert, studied the diagrams in the technical manual before making a new electrical harness.



The metal gas tank shroud that housed the bladder was reworked. The gas line was run from underneath into the stainless steel tank. We use aviation fuel to keep the fuel pump seals from deteriorating.

The assembled gas tank – it's no longer the actual tank. We used the original metal shroud, designed to hold the rubber bladder, to conceal our custom gas tank within the shroud.



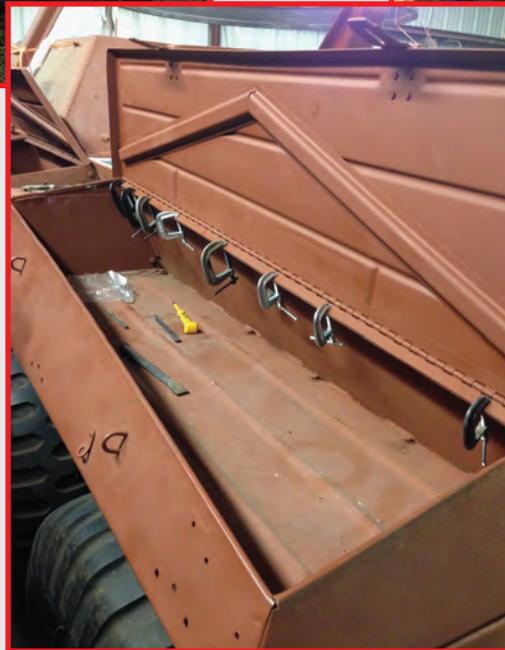
The original bladder was installed by removing all the bolts from one end. We designed a 25-gallon, custom-made stainless steel tank (approximately half the capacity of the bladder) and mounted it in the shroud. Modern fuels would likely dissolve an original bladder and clog the fuel system.



Bill White hand sanded the duplicated wooden seat slats. They had to be cut down from larger pieces, as wood in the original dimensions of the slats can't be purchased. We had the original wooden seats, but the wood was beyond repair.



The finished seats were beautiful pieces of workmanship. We left them unpainted, as Patton would have had them. The polished Patton look was extended to his motor pool. It had to be cleaned, shined, polished, and had to pass 'his' inspection, which was not easy.



The left rear storage locker was damaged beyond repair. Midwest Militaria took the original and reproduced an exact duplicate - correct in every way. A perfect fit and you cannot tell the difference from the original.

In the restoration of the armored car, we used the original type of US Army 1/2 inch brass stencils as were used 70 years ago. Michael Maloney, who is an expert, award-winning modeler, did the stenciling. Bill White, an electrical engineer did the wiring.

During Bill's time in the service, he worked on Nike missiles. He had little trouble wiring the M20 as it's snaked with wires, through armor, piping and conduits. The dash in itself was a challenge, but he overcame it to make a perfect working dash, where all the lights and controls work as they once did. There were quit a few bolts missing, and finding the needed fine thread nuts, bolts and screws was difficult. We

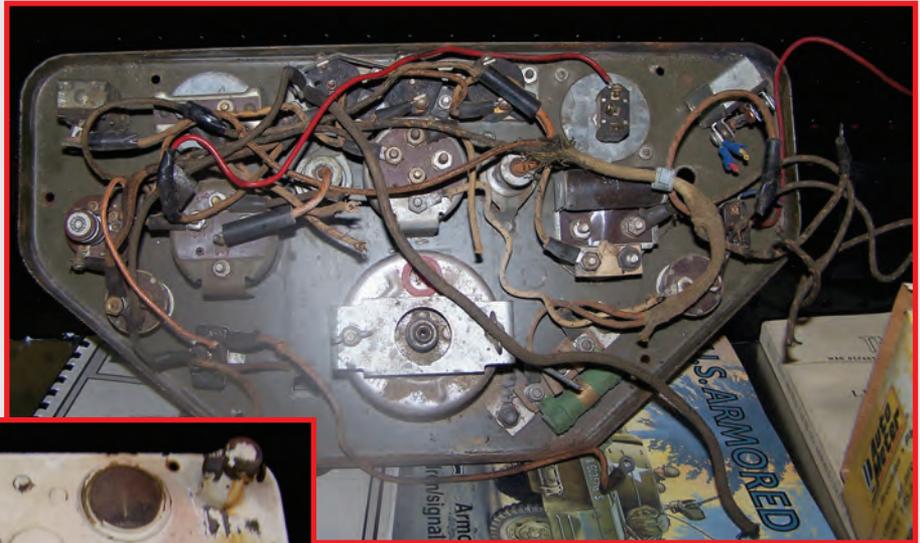
want to thank Midwest Militaria who reproduced a compartment door lid so well you can't tell it from the original. We did have to make a few parts but they were small enough that we could make them by hand.

Two of our Third Army Living Historians served in the armored corps and had been deployed in Iraq and Afghanistan. They were given the ordnance job and it was done to perfection. Roger that!

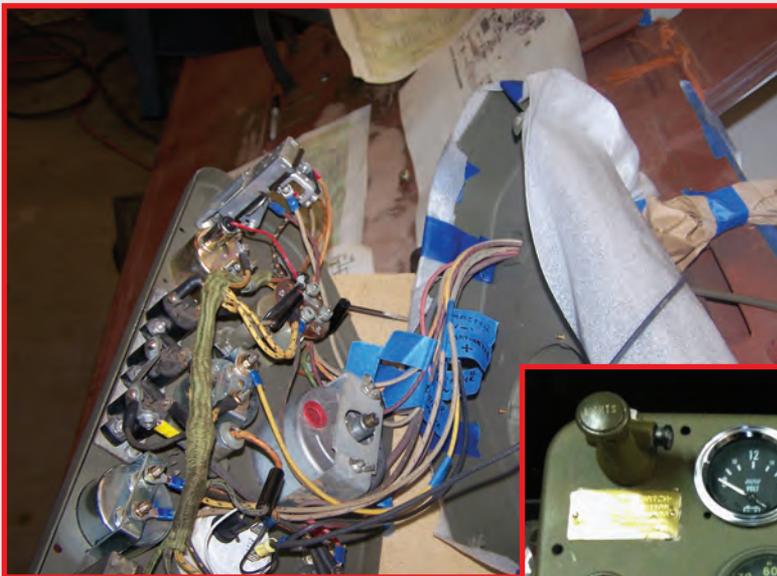
The accompanying photographs should tell the visual story but unless you have worked on one as a team, you won't really comprehend the camaraderie of completing such a project.

The wiring harness was toast.

Bill White, an electrical draftsman and skilled writing expert, studied the diagrams in the technical manual before making a new electrical harness.



The instrument panel had been modified over the years with non-military switches, and was painted over many times.



The instrument panel and wiring harness was tested over and over before it was reinstalled. We used a portion of an NOS harness and wanted it to be totally functional.

The restored instrument panel as it was in 1944. This is the electrical nerve center of the M20. If it doesn't work most everything electrical won't work either.



The Table of Organization and Equipment for the Ford M20 is found in the Field Manual. We followed the specifications and made sure all equipment assigned to an M20 was present, then we added Patton's Thompson .45 machine gun.

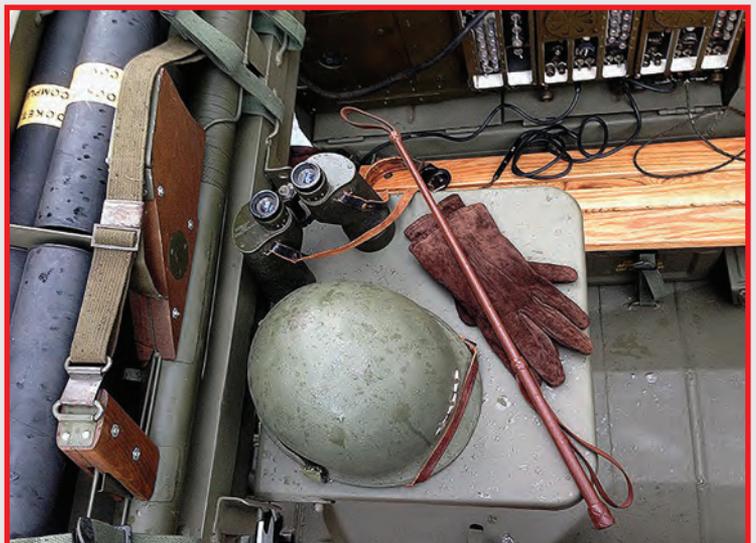


This hard to find item is a directional compass assembly, with mount made by Sherrill Research Corporation Model AEG-1 Mfg. 1944. The compass allowed the assistant driver to know the direction they were traveling and helped orient him to a map grid reference while buttoned up under combat conditions.



No detail was overlooked. If it was there in WWII it was there when we finished the restoration. The seats turned out to be as Patton would have insisted.

A typical Patton trait. Here his helmet, riding crop, gloves and binoculars rest on the map table in the M20. Note the bazooka and rounds to the left.



## ***THE FINISHED RESTORATION***

We chose August of 1944 as our target date to replicate Patton's M20. We left the ring mount on as it was at that time. There is some photographic evidence that mount remained installed until late fall 1944.

Since our M20 was manufactured a little later than Patton's, both in 1944, we felt it better to leave it the way it was manufactured. We did this to keep the historic integrity of the original vehicle and equip it likewise. We used a SCR 508 radio on the passenger side and a SCR 510 on the driver's side. All of the interior fittings are in accordance with the US Army Table of Organization for that period. The addition of a Thompson SMG mounting rack and set of horns was in keeping with General Patton's personal taste. As a man who enjoyed the polished look, the seats were left in the raw and not painted, but covered in a protective varnish coating. Every effort was taken to keep the originality of the M20 and preserve its unique history, under the trappings of Patton's M20.

To double check the accuracy of our work we used the very few images of Patton's M20 that we had on hand and compared them with our armored car during the restoration process to ensure it was as authentic as could be for the era. This was our way of honoring the Greatest Generation one of its best field commanders and his mighty US Third Army. To quote Patton, "When a man has done his best, what else is there."



The restored M20 – driver's side front. It is complete with all of the tools, markings and air horns, now replicated as it was in 1944.

## ***SPECIFICATIONS***

Ford M20 serial number GBK 2937. It was the 131st vehicle made in December 1944 and carried the US Army registration number 60113709.

## ***ACKNOWLEDGEMENTS***

A very special Thank You to Gary and Linda Haas. Also to those that made this restoration happen; Carlos Manning, Ken Stewart, Michael Malony, Will Huntington, Ray Marino, Bill White, Claude Vaughn and Michael Ditto. Thanks to Bill Bauer, who allowed us access to his M20 as well.

## ***VENDERS WE ARE GRATEFUL TO***

John Bizal, Midwest Military; Paul Vien, TM9 Ordnance Products; Gary Hebding, Gary's Halftrack Parts; Niedick Hardware, Tomball, Texas; Brent Mullins, Jeep Parts; Triple C Industries, Waller, Texas; Rick Larsen's Military Stencils.

## ***REFERENCES***

Library of Congress: Patton Papers, Pascale Craan, researcher extraordinaire. The Patton Museum of Leadership, Fort Knox, Kentucky.



This top front view shows the relationship of various equipment and markings on the restored M20.

AM