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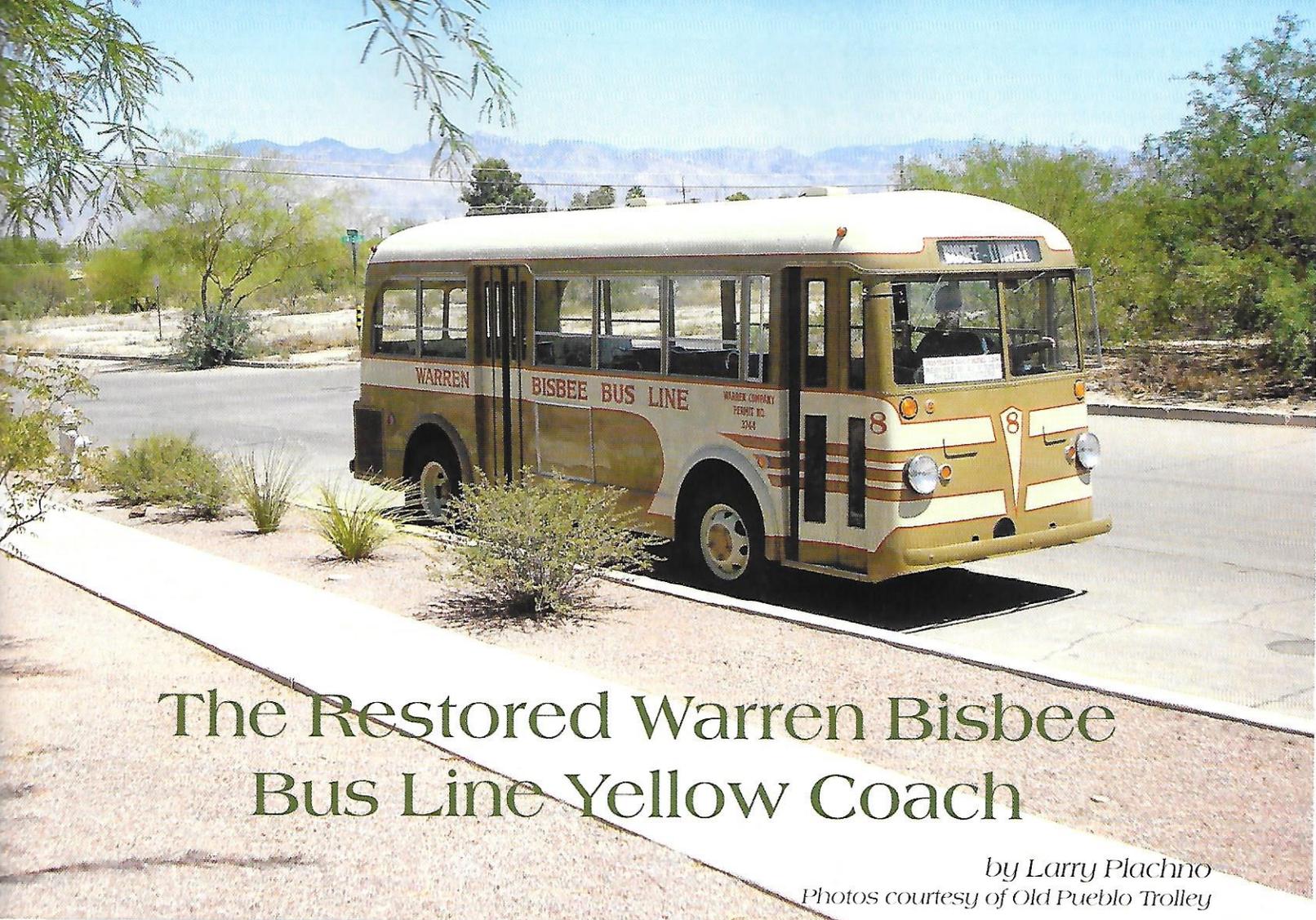
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The Restored Warren Bisbee Bus Line Yellow Coach

by Larry Plachno

Photos courtesy of Old Pueblo Trolley

The restoration of this 1938 Yellow Coach model 1204 from Warren Bisbee Bus Line easily ranks as one of the most difficult and impressive bus restoration projects we have ever seen. It involved more than 10 years of work, two grants and countless hours of volunteer labor. The model 1204 is particularly historical because it represents the first bus in its class built with a rear engine.

It is always welcome news when we hear of individuals, groups and organizations that preserve or restore historic buses as part of our industry heritage. One of the most impressive bus restoration projects I have ever seen is the recent effort of the Motor Bus Division of Old Pueblo Trolley to restore a 1938 Yellow Coach Model 1204 transit bus that originally operated for Warren Bisbee Bus Line. Turning a nearly 75-year old derelict and incomplete bus into a new looking, fully-operating bus was a task bordering on the amazing and went beyond restoration to rebuilding. In addition, this model represents bus development in the late 1930s, arguably the decade when buses improved the most because of a revolution in bus design.

The story behind this bus and how the Warren Bisbee Bus Line came to be operating in a mountainous and somewhat remote area is fascinating. The story behind the bus acquisition and restoration is equally interesting.

Bisbee, Arizona

This all starts in Bisbee, located in the southeast corner of Arizona. It is less than 10 miles north of the Mexican border and about 70 miles west of the New Mexico state line. Situated in the Mule Mountains, the area is quite hilly and was best known for its copper ore deposits. In 1900, Bisbee was essentially a company town with much of the community surrounded by the copper mines of the Copper Queen Consolidated Mining Company, a subsidiary of Phelps Dodge Corp.

Most everyone walked to work since in those days there was no regular public transportation, although there were some horse-drawn buggies and buckboards. The only railroad in Bisbee was the Arizona and South Eastern Rail Road Company. It was built in 1888-1889 by Phelps Dodge primarily to move copper anodes from the Bisbee smelter to other railroads for shipment to a refinery in El Paso, Texas. The successor company known as the El Paso & Southwestern Rail-

road Co. reached El Paso in late 1902. This railroad eventually expanded to a length of more than 1,200 miles before it was sold to the Southern Pacific in 1924.

The need for local transportation came about because of increased use of electricity after the turn of the century which resulted in a substantially increased demand for copper. The Calumet & Arizona Mining Co. was primarily owned by Michigan interests plus a few other companies. It arrived in the Bisbee area looking to establish its own copper mines. Finding that the Copper Queen already had the best sites near Bisbee and knowing that additional population would be coming into the area to work the mines, Calumet & Arizona Mining developed the townsite of Warren, about four miles southeast of Bisbee. It was named for George Warren, a local colorful character who was credited with founding Bisbee.

In order to connect the residential areas and mines, the Calumet & Arizona interests built a short interurban electric railway that

opened in March of 1908. The main line ran from Warren through Lowell to Bisbee, a distance of a little more than four miles. It was scheduled to take 25 minutes and rose 377 feet in elevation. A branch line, called the "High Line" or Briggs Branch, left the main line at a junction south of Lowell. It was not much more than a mile long and was scheduled for 15 minutes and rose 347 feet in elevation. As with many interurbans, street operation was used in Warren, Lowell and Bisbee. In later years an extension was built south of Warren to the Country Club and in 1910 the line was extended north up Tombstone Canyon.

This particular line ran to places with interesting names such as the machine shop of the Copper Queen Mine, Dump Hill, Brewery Gulch and Tombstone Canyon. The line initiated service with six handsome 42-foot McGuire Cummings interurban cars that ran a 30-minute service. Reports suggest that the line had good patronage in the early years and operated from 5:30 a.m. to 2 a.m. Miners commuted on the cars to all three work shifts. In between there was some mid-day shopping traffic, while the late cars were patronized by the bar crowds.

The Transition to Buses

Due to increased use of private automobiles and a decline in copper mining, local transportation began to suffer. In the fall of 1926, passenger train service into Bisbee was discontinued in favor of a Southern Pacific shuttle bus that ran a few miles south to Bisbee Junction on the main line. The electric interurban railway did not last much longer. The last run took place on May 31, 1928 and the company converted to bus operation on the following day. The name was changed



Yellow Coach built two new model 1204 buses for Warren Bisbee Line in 1938. This builder's photo taken in Pontiac, Michigan, shows Warren Bisbee Bus Line number 7 and 8 before being sent to their new owner. They replaced older Studebaker buses and were primarily used on the regular route between Warren and Bisbee.

to Warren Bisbee Bus Line and buses were garaged in the old car barn in Warren.

The initial bus fleet consisted of two 40-passenger Twin Coaches numbered 1 and 2 to provide commuter service for the miners. In addition, four 21-passenger Studebaker buses numbered 3 through 6 were used for the regular route between Warren and Bisbee. In 1938, the Studebakers were replaced by two new Yellow Coach model 1204 buses. Numbered 7 and 8, these two buses were powered by Chevrolet gasoline engines and seated 24

passengers with double seats behind the driver on the street side and single seats on the curb side. These two buses are the primary actors in this restoration. They were particularly significant because of being the first models in their size with a rear engine.

Surviving information suggests that the Warren Bisbee service was operated on a 20-minute headway until 6 p.m. and then a 40-minute headway until about 11:20 p.m. To maintain the service, two buses were required during the day and one in the evening.

Fares were five cents per zone for adults and four cents per zone for students. There were only two zones: Lowell north to Bisbee and Lowell south to Warren. Tokens were available at discount prices.

Unfortunately, a complete roster of equipment is not available but we do have a general idea based on reports from local residents and industry records. We do know that two similar Yellow Coaches were purchased new prior to the War. They were Yellow Coach model TG2401, the successor model to the 1204. One was delivered in December of 1939 and the second arrived in January of 1941. They were painted the same as #7 and #8 but these were numbered #5 and #6, re-using numbers earlier assigned to the Studebakers. The company also acquired two Ford Transits in November of 1942 (probably #3 and #4) and one GM TG3609 that became #10. As with many other bus companies, this fleet worked very hard during the war years.

Following the war, two used Yellow Coach model TG2401 buses were purchased used from Tucson Rapid Transit Company.

Railroad passenger service to Bisbee ended in the fall of 1926. It was replaced by a bus that shuttled to meet trains a few miles south to Bisbee Junction on the main line. Taken during World War II, this photo shows a Yellow Coach model 722 or 723 operating the Southern Pacific shuttle to Bisbee.



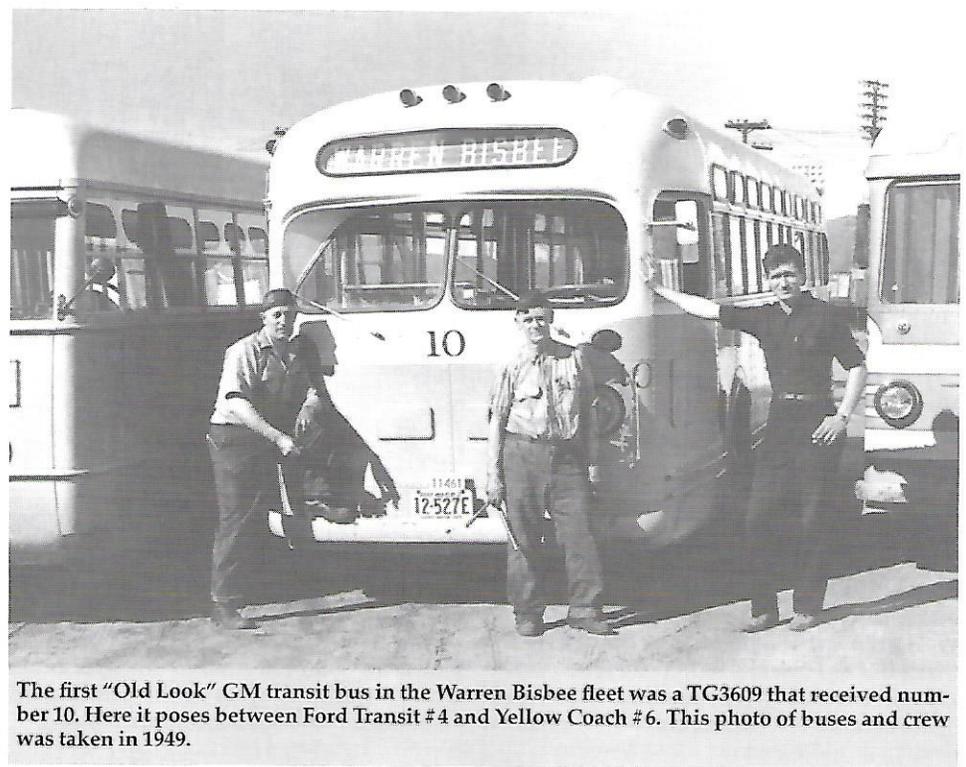
Some used GM diesel coaches were purchased in 1951, replacing the earlier Yellow Coaches, although the Ford Transits remained in service for a while.

At some point during the mid-1950s, the bus operation was taken over by the Arizona Public Service Company and they continued to use the old interurban barn in Warren. In later years this company switched to less expensive bus equipment trying to make ends meet. Photos survive showing that they operated smaller flat front Blue Bird transit buses at the end. Continued use of private autos and the decline of the copper industry forced the bus line to cease operations in 1971. By that time total annual ridership had dropped to only 23,743 passengers.

In more recent times, the local communities including the area served by the bus line were incorporated into the City of Bisbee. Today, the population of the city stands at about 6,200.

The Significance of the Yellow Coach Model 1204

Most transportation historians will agree that the decade of the 1930s represents more progress in bus building than any other decade. As we entered the 1930s, most buses were built as bodies on chassis and only since 1922 had a purpose-built bus chassis been made available. Engines were gasoline, transmissions were stick shift, design was "conventional" with the engine in front, and intercity coaches carried luggage on the roof. Due substantially to Yellow Coach, by the end of the decade buses were built with integral construction and engines in the rear, diesel engines were now optional, intercity



The first "Old Look" GM transit bus in the Warren Bisbee fleet was a TG3609 that received number 10. Here it poses between Ford Transit # 4 and Yellow Coach # 6. This photo of buses and crew was taken in 1949.

coaches had underfloor luggage compartments and optional air conditioning, while many transit buses offered optional automatic transmissions.

The reason for the excitement over a Model 1204 Yellow Coach is that it represents many of the culmination of changes that took place in bus building in the 1930s. It was the first model in its class to have a rear engine and was one of the first bus models to offer an optional diesel engine. The model 1204 is relatively rare. Only 770 were

built and prior to this restoration, only one other example of this model was known to have survived.

In 1908, a successful automobile salesman by the name of John D. Hertz quit his existing job on Chicago's Michigan Avenue and went into a partnership with an automobile dealer named Walden Shaw. The partnership was unable to sell some used automobiles and decided to go into the taxi and livery business. When a study discovered that yellow was the most noticed color for vehicles, they founded the Yellow Cab Company in 1915. By 1917 they were building vehicles in Chicago under the Yellow Cab nameplate. In the next few years, Yellow Cab Manufacturing Co. is credited with building 95 percent of the new taxi cabs in the United States.

Both the earlier interurban electric railway and the Warren Bisbee Bus Line operated in an area with some interesting and colorful names. Presumably taken in 1950, this photo shows Warren Bisbee Bus Line number 8 running through Tombstone Canyon.



By April of 1923, Hertz was building buses under the Yellow Coach Manufacturing Company name. Due to a connection with The Omnibus Corp, he built buses including double-deckers for Fifth Avenue Coach in New York and Chicago Motor Coach in Chicago. Soon, Philadelphia and other cities became customers. In 1926, Yellow Coach set an industry record by building 1,700 buses. By April of 1930, Yellow Coach began building intercity buses for Motor Transit Corp., which would soon become Greyhound, the largest of the intercity carriers. Hence, by 1930, Yellow Coach was already capturing much of both the transit and intercity bus building business.

Hertz sold Yellow Coach to General Motors in 1925. It operated under the Yellow Coach name until the name was changed to GM Truck & Coach Division in 1943. John Hertz left the bus business and briefly went



Warren Bisbee bus 7 ended up in a field about 10 miles east of Warren. While it still had some running gear, the body was in bad shape and almost nothing was left of the interior.



Warren Bisbee 8 was found many miles away in St. David. While much of the running gear was missing, the body was surprisingly intact and even had most of its windows in place.

into aviation, purchasing Transcontinental & Western Air (later known as TWA) that he then sold to Howard Hughes. Hertz then went into the car rental business where he again became very successful.

A young man named Dwight Austin introduced a new bus design called the Pickwick Nite Coach in about 1930 that was similar to a Pullman car. While the model was never substantially successful, it did pioneer a rear engine with angle drive and integral construction. General Motors brought Austin to work at Yellow Coach in 1934. Soon, the Yellow Coach product line included buses with rear engines and integral construction.

In June of 1936, Yellow Coach introduced their model 733 which had a flat front but a forward engine next to the driver. It was primarily intended as a 21-passenger lightweight bus in the low price range. In 1938, Yellow Coach introduced their new model 1204. Although the body was similar to the 733, the 1204 was the first of its class to have a rear engine. The front door was moved forward while the steering axle was moved back. This increased passenger capacity from 21 in the 733 to 24 in the 1204. Hence, the 1204 was one of the first transit bus models to have the rear engine and other modern features. Warren Bisbee Bus Line #7 and #8 were delivered with a 6-cylinder in-line Chevrolet 216 inch gasoline engine. This same model could also be ordered with a Detroit Diesel 2-71 engine or a larger 235-inch Chevrolet gas engine.

Old Pueblo Trolley

Old Pueblo Trolley is a not-for-profit transportation museum based in Tucson, Arizona. It has three divisions. Their Street Railway Division restores, maintains and operates trolley cars on University Boulevard and Fourth Avenue in Tucson. Its Bus Division restores and maintains examples

of transit buses that have been used in Tucson and southern Arizona. The third division is the Southern Arizona Transportation Museum that is open to the public and includes a 1900 steam locomotive.

Back in the summer of 1995 people in the bus division of OPT remembered two historic buses located in a field east of Warren, a Yellow Coach 1204 and a Twin Coach, both derelict and vandalized. The story that unfolded was that these two buses were sold by the Warren Bisbee Bus Line to the Southern Arizona Auto Company in Lowell, Arizona in 1951. They were subsequently sold to Orrin and Edna Soles of Warren who planned to use them as a rural retreat.

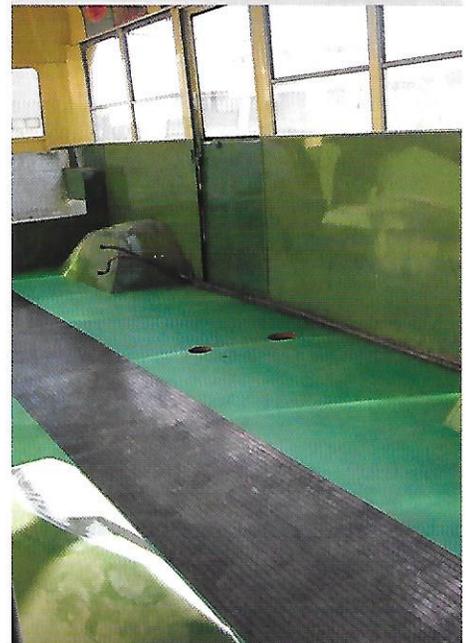
This photo shows the rebuilt interior and reupholstered seats of Warren Bisbee bus 8. One of the single seats on the curbside had to be reconstructed from a regular double seat. Car cards above the seats were also installed.

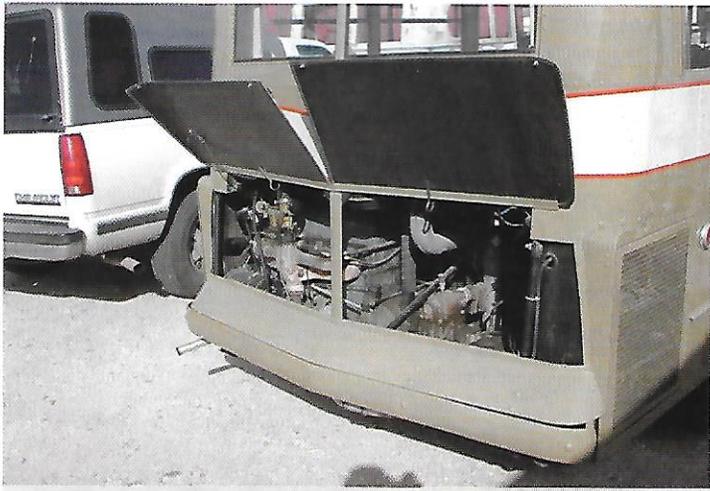


Both buses were driven to property about 10 miles east of Warren owned by the Soles. They had a well dug and power brought to the property and started to work on the buses. However, vandals began to damage the buses, steal body parts and other components to the point were the Soles gave up the project.

The Yellow Coach was Warren Bisbee #7. Unfortunately it had been badly vandalized. Windows were broken, most of the interior was gone, parts of the aluminum body were missing and many of the running parts were gone. The Soles agreed to donate both buses to the museum. While the OPT group had done some amazing restoration work in the past, and while restoring a Yellow Coach 1204 that had run in southern Arizona was highly

Matching the original flooring proved to be a problem. A router was used to duplicate grooves in the black center aisle and the green flooring under the seats had to be installed upside down to duplicate the original appearance.





This photo shows the engine compartment in rebuilt and repainted bus #8. The engine was first fired up 10 years after work started on restoration.



The restored driver's area of bus 8 retains an authentic dash and controls. The fare box is typical of those used in small buses on rural routes.

tempting, given the number of missing or damaged parts the work involved would have been both formidable as well as daunting. What was needed was some good luck, or possibly Divine Providence.

It arrived rather quickly. On their way back to Tucson, volunteers discovered the body of another bus in St. David, Arizona. Inquiry at the nearest house found the owners, Jack and Flora McRae. The bus turned out to be Warren Bisbee Bus Line #8, the sister to #7. The bus was purchased when retired in 1951 for a road side food concession stand. After that, it was used for storage and the axles were removed to make a small trailer. The owners agreed to donate #8 to OPT as well as the axles used for the trailer.

The body of #8 was surprisingly intact with most of the window glass and both doors still in place although most of the interior was gone. Unfortunately, the springs had been removed by torching them off of the chassis. Hence, the OPT volunteers decided that it might be possible to restore

bus #8 using parts and the chassis off bus #7. A big problem was there there were several parts missing that were not found on either bus.

Good fortune again smiled on the volunteers. They received a grant of \$17,172 from the State of Arizona Heritage Fund in 1996 to restore bus #8. It required matching donations or volunteer hours. A second grant in the amount of \$23,562 was awarded in 1999. In addition to thousands of hours of volunteer labor, numerous individuals, companies, associations and the City of Tucson provided material, parts, and work space or labor to assist the project.

The chassis under bus #7 had to be substantially rebuilt and repaired as needed. The bus apparently suffered from overuse and minimal maintenance during the war years. Then the body of #8 was placed on top. It was a special day on December 10, 2005, when the engine was fired up. This marked the first time in more than 40 years that the bus had run and also marked more than 10 years since the restoration started.

What about the missing parts? A major step forward came when the OPT volunteers were alerted to a potential parts bus in Hanford, California. This turned out to be San Bernardino, California #106, later used in Hanford, California with the same number. It contained seats, heaters, unbroken dash instruments and other interior parts that were not found in #7 or #8.

Even with this third bus there were numerous parts still missing that had to be sourced, or in most cases, hand built. An excellent example was that one of the two single forward facing seats on the curb side was still missing. This was finally resolved by two volunteers who took a double seat, cut it apart, and welded the two ends closer together to create a single seat frame. This turned out to be one of the easiest jobs in finding or making missing parts.

The Yellow Coach 1204 has hydraulic brakes with a vacuum assist as well as vacuum doors since they had no air compressor. There was only one cylinder for the vacuum assist and it was missing a tiny part

Extra work went into the rebuilt dash. Some of the knobs had to be specially engraved because stock knobs were no longer available with the proper wording.



Numerous items such as the stop lights and license plate holder had to either be rebuilt and painted or a replacement found from a variety of sources.



that controlled how far the piston moved when the brakes were applied. All the volunteers had to work from was a drawing in the maintenance manual. One of the volunteers had to design and fabricate the missing piece. He did a great job because the restored bus now has excellent brakes.

Perhaps the worst of these projects was replacing the missing transmission top that had been removed while the bus was sitting in a field. Fortunately, most of the transmission parts remained intact and useable in spite of being exposed. However, where do you go to buy a top for a 1938 transmission? Fortunately, Luke Bonagura of U.S. Coach in New Jersey had a similar transmission on his Yellow Coach TG2706 and offered the loan of his transmission top. From this molds were made, a new transmission top was cast, and then it had to be properly machined. Even then, additional milling work was necessary to get everything to work properly.

Another troublesome missing part was the remote shift tower. Here the volunteers had a little more luck because they were able to find a close match in an old transmission shop. The casting was similar to the original but longer by about two and a half inches. Drawings were made and a machinist cut the "barrel" down to the required size.

Even then there was a long list of other items to attend to. New wooden flooring had to be installed. Masonite was applied for the wall and ceiling panels. Getting it to bend around corners without breaking required a special procedure involving wire brushing and then wetting the back side of the panel and letting it sit on top of soaked newspapers for 24 to 48 hours.

None of the original flooring material was still available. The original center aisle flooring material was black with grooves. The volunteers found flat flooring material and then cut the grooves in with a router. Likewise, the flooring under the seats proved to be another project since the original plain green flooring was no longer available and had been replaced by a marbled pattern. The volunteers eventually found a manufacturer who had flooring with the marbled effect only on top. So they installed the flooring upside down.

Most of the interior was completed by 2007 when attention shifted to painting. The volunteers were fortunate in being able to borrow a paint booth on weekends to apply the darker color. Then, the cream was applied followed by orange-red stripes and lettering. The owner of the paint booth was so impressed he offered them a job. The only paid person was an artist that painted pin stripes around the lettering. The entire process of replicating the original paint took hundreds of hours.



Warren Bisbee Bus Line bus 8 is now completely restored and operational. Considering what the Old Pueblo Trolley crew had to work with, the condition of the restored bus is amazing.

The restored Warren Bisbee Bus Line #8 is now 73 years old and fully operational. It is currently stored in a location where it can only be viewed by appointment, although it has been put on display at several shows. Future plans call for using the bus for special occasions so that people can enjoy it. Warren Bisbee Bus Line #8 is easily one of the finer bus restoration projects and a credit to the volunteers at Old Pueblo Trolley.

What, you may ask, is the Bus Division of Old Pueblo Trolley doing as an encore after this remarkable restoration of #8? The answer is that the guys are currently working on the Warren Bisbee Bus Line #1, the 1928 Twin Coach found in the field adjacent

to #7. This bus carries serial number TC264 and the design was later known as the Model 40. Keeping with the Twin Coach name, it has dual engines located midship, each with its own transmission and drive shaft. Of the 1,200 built, only three are known to still exist besides the ones owned by OPT. When restoration work is completed on this bus, it will be the only one restored and fully operational.

If you are interested in making a donation to Old Pueblo Trolley or offering your time as a volunteer, you can reach them by mail at PO Box 1373, Tucson, Arizona 85702; by e-mail at caywoodgm@juno.com or by phone at (520) 360-0268. □

Now that bus 8 has been restored, the Old Pueblo Trolley crew are turning their attention to restoring Warren Bisbee bus 1, a 1928 Twin Coach. It was parked adjacent to bus 7 in a field 10 miles east of Warren. The restoration is already well underway. This photo, taken while it operated for Warren Bisbee Bus Line, hopefully indicates what the bus should look like when fully restored.

