

INSTALLING AN *Automatic Transmission*

BY
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I couldn't drive my Model A! After suffering a major injury to my left leg, I could no longer lift my left leg to depress the clutch pedal. But my wife, Norene, and I agreed that this was not going to keep us from enjoying the hobby. We just had to find a way for us to



Testing the adapter kit on the back of an engine.



We had to account for the new clearance for the relocated brake pedal.



The Speed Gems transmission adapter kit.

travel in our Model A once again.

Our first plan was to research, construct, and install the left-hand-operated clutch that Jerry Kelly had told us about in May/June 2020 issue of *The Restorer*. After obtaining the plans and building the pulleys and cable setup, we took a hard look at how it would operate after installation.

Something about that modification was concerning to Norene. With the left hand pulling the clutch handle and the right hand shifting gears, she asked, "Who is holding



Accommodating the length of the transmission body required removing a portion of the leading edge of the frame's cross member.



Modifications included shaping a plate to follow the curve of the transmission and align with the floorboards.

the steering wheel?"

With that realization, the handwriting was clear, and I began to look for an alternate solution.

Over an inspired

lunch meeting in my friend Dave Delmue's well-equipped machine shop, we discussed the pros and cons of installing an automatic transmission. Dave is an inspired backyard mechanic with a complete machine shop setup who has assembled six or seven new Burtz engines. With Norene's approval, along with encouragement from fellow club member and friend Dave Jones, backed up by his wife, Susan, we proceeded with plans for installing an automatic transmission behind a new Burtz Model A engine.

The task seemed simple enough: find a kit, install the specified transmission, replace the closed drive line with an open driveline, and rework the brake linkages. Little did we know what we were in for to get my Model A back on the road.

We found that Speed Gems in Minnesota makes a conversion kit to adapt an automatic transmission to a Model A engine. The kit is very complete with an adapter plate, crank adapter, torque converter drive, miscellaneous bolts, and a 12-volt starter. (See photo on page 12.) Speed Gems has been making this kit since before 2001.

Not wanting to remove the Tudor body and to minimize any modifications to the Tudor's frame, we did a complete mockup in an old Model A frame. Next, we began assembling the necessary parts to create the mockup mule. Using the open frame without a body allowed more freedom for visual inspection of the task ahead.

The transmission we used is a Chevy 700R/4, but



One beauty of the Lokar shifting assembly is how the mounting bracket attaches to the top of the transmission.

that would not be obvious after it was installed. This transmission came in Camaros, Blazers, Corvettes, and S10 trucks from 1982 to 1993. The fourth gear is a 30 percent overdrive. The forward gear ratios are 3.06, 1.63, 1.0, and 0.7. Reverse is 2.9.

The first change we noted was that the length of the transmission body (23.4 inches) required removal of a portion of the leading edge of the frame's mid-cross member. (See photo on page 12.) This modification, along with a strap across the bottom of the 155-pound transmission, preserved the integrity of the original frame.

The second issue, caused by the transmission's increased length, was the need to move the service brake cross shaft rearward. This required shortening the rear brake rods and lengthening the front brake rods. (The geometry remains the same as Henry intended.)

With the removal of the stock transmission, the attached mount for clutch and brake pedals was lost. So the next task was to design, fabricate, and mount a new brake pedal assembly.

We had to decide whether to come off the transmission, as with an original Model A, or to come off the frame. It was decided that mounting the brake pedal on the transmission would be too difficult, thus the frame mounting won out. The brake pedal puts quite a bit of force on the bracket. So we reinforced the new bracket with a triangular gusset plate.

The next area of modifications was to the floorboards and to provide access to the battery. The top



We fabricated a steel strap to support the radius rods and another to support the wishbone up front.

shape of the automatic transmission cleared the firewall, so only minimal modifications were required to the front floorboards.

We identified the new clearance for the relocated brake pedal and shaped a metal plate to follow the curve of the transmission and maintain the original alignment.

The space between the frame and the new transmission was too tight for an original-size battery. While an Optima 12-volt battery is slightly smaller, the

space was still too tight. So we moved the battery rearward and installed a drop box for future battery removal.

Now for the gear shift. Lokar Performance Products provided the answer. I chose their 32-inch gearshift lever, which resembles a Model A gearshift. I next chose a knob like the Model A's, but with a push-button safety that eliminates accidental shifting.

The beauty of the Lokar assembly is the mounting bracket that attaches to the top of the transmission. (See photo on page 13.) This bracket allows the gearshift shaft to adjust forward or backward and come through the floorboards at the same location as an original Model A, further hiding the modifications under the floorboards!

The parking brake mounting required yet another modification, Delmue fabricated a mounting bracket from 3/8" steel plate. (See photo on page 13.) This put the brake handle near the original location.

The longer transmission prevented using the Model A's enclosed driveshaft. We found a U-Weld-It Driveshaft and Open-Drive Driveshaft kit at Speedway Motors that did the trick.



Tight clearance to the wishbone required transmission cover modification.



Transmission radiator nestled in frame siderail.



We reinforced the rear radius rods, welding steel rods to their interior.

Without the closed driveshaft, we needed another significant modification to reinforce the rear radius rods. These rods were not designed to take the full load from flexing and rotation of the torque transferred between the transmission and rear end assembly.

Since the radius rods are hollow, it was possible to add compression strength by welding steel rods to the interior. This allowed the radius rods to make up for the portion of the load that the closed driveshaft used to carry.

Without the closed Model A driveshaft/transmission, the normal support for the modified radius rods was also gone. A 3/8" steel strap was fabricated to support the radius rods, and another to support the wishbone up front, as there is no clutch housing to which to attach it.

Clearance between the transmission inspection cover and the wishbone mount is tight, and the cover was reshaped to clear the wishbone mounting ball.

Along with the original Model A radiator, another cooler was needed for the automatic transmission.



Since installing the automatic, I've driven the Tudor about 1,000 miles to club events.



I can again give rides to my car-loving granddaughter.

Delmue found a unit from Summit Auto that was the perfect size to fit within the C-shape of the Model A side frame. (See photo on page 14.) This transmission is sometimes known to overheat, but the issue seems to be hard driving with high horsepower. We suspect this won't be an issue, even behind a Terry Burtz five-main-bearing engine with high-compression head, performance cam, lightened flywheel, and downdraft Weber carburetor.

What at first appeared to me to be easy changes, instead required carefully thought-out solutions. Delmue's ability to construct robust, safe, and clean modifications to my Model A resulted in a well-performing conversion. The underlying goal in rebuilding the Tudor was that we wanted: a reliable car for touring, I now have clocked more than 1,000 miles on both flat land and mountain roads ... all without any issues or needed repairs.

I must say that I miss shifting the A, as I've always enjoyed shifting gears. Over the years I've had many cars with four-on-the-floor or three-on-the-tree, but what I miss most is downshifting and double clutching.

When pulling a hill, the automatic transmission smoothly shifts down from overdrive. When first starting out, the shifting is a bit abrupt, but it smooths out after all is warmed up. I plan that this year will see the Tudor on local club tours, at a couple of regional meets, and in Ruidoso at the MAFCA National Convention.

With sincere thanks to Dave Delmue's fine craftsmanship, you now can find me behind the wheel of my 1930 Tudor Model A — or, as my brother (a Chevy fan) calls it, my *Chevol'A*. See you on down the road. ☺

Rodger Griffin lives in Gilroy, California. He bought his Tudor in 1968 and joined the Santa Clara Valley Chapter in 1969. Rodger has served on the MAFCA Board and as President in 1976. ☺