THE MAKING OF A 1926 MODEL T FORD SPEEDSTER

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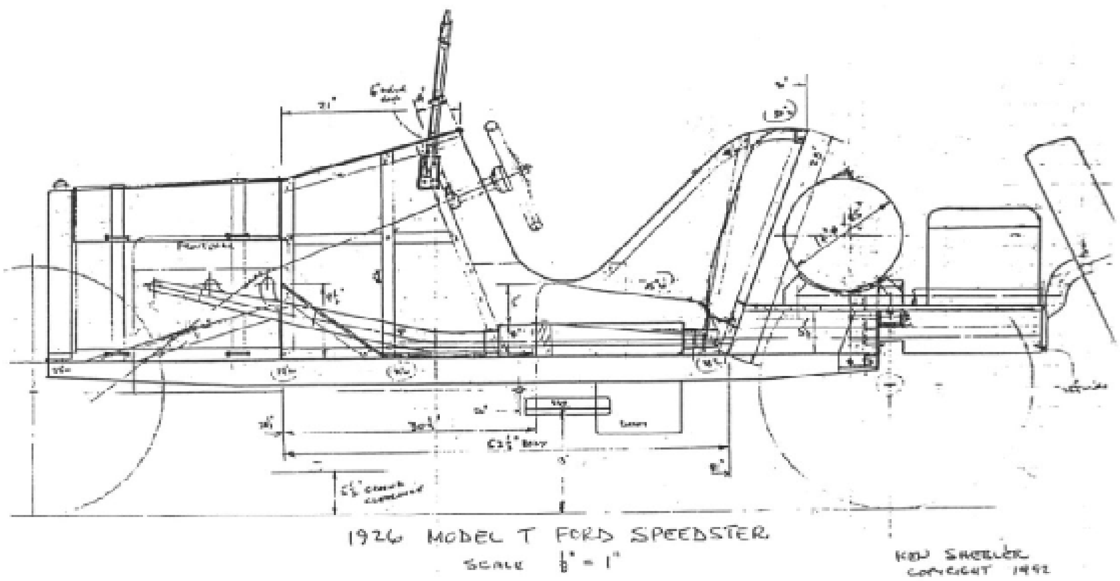


From a sketch to reality.
Dreams can come true with a little perseverance.

Ed. Note: So you think you want to build a Speedster! Ken Shebler is well known down under for his engineering and mechanical prowess. Fortunately for Speedster fans, Ken made a detailed record of his latest project and has offered to share it with us. This is the first part of a two part series. The final installment will appear in the January-February issue. Given that Ken speaks Australian and I speak American, I asked Ted Aschman to help translate or offer American equivalents to some of Ken s procedures. Our apologies to Ken for any error in our translations. If you are mechanically inclined, we think you will enjoy Ken s approach to the many facets of his project.

After having restored several Model T Ford vehicles, I waited to take up an additional challenge-1 wanted to step up into a modern sports car, and had my eyes on an English MG TC or TF. One of my club friends has an MG TC and a couple of years ago I tried the “cockpit for size. Those who know me realize that this is a prerequisite for an acceptable marriage of man and car. *(Ed. Note: Ken is 6 foot 4 inches, plus.)* Alas, the shoehorn fit proved uncomfortable and after evaluating the situation following a five minute exit, I decided an MG-TC/TF was not for me.

What to do? Well I like Model T Fords and I like restoring them, which in my case entails rebuilding new bodies, both woodwork and metal exterior. So I decided to start up a new challenge of building a Model T Ford Speedster. That was in 1987. Thus commenced what I call my “T6 project.

The first thing I did after this decision was to talk, see, read and ask. I looked up all my old *Vintage Ford* and *Model T Times* magazines to get ideas and I purchased any and all books and articles relating to the use of Model T Fords as racing cars. I was pleasantly surprised to find that a lot of information was available from the old days. Such books as *Dykes Motor Manual* (the 13th edition, in particular), *Model T in Speed and Sport, Model T Speed Secrets,* Chevrolet Brothers Frontenac Catalog No. 81 and other articles were a gold mine of information. Many accessory companies sup plied the 1920 s market with products to convert the Model T from the family car to a smart and fast speedster or dirt track racer. However, such accessories are seldom available today, and one has to be content with modern alternatives, as reproductions or adaptions of the original.

I also spoke with many friends in the various Model T Ford clubs in which I am a member. Here was the wealth of information on "how-to and "what with regarding the best way to proceed with my project.

From all this information, I slowly formed a solid picture of how I would proceed and what components I would use, or at least try and obtain for use.

The body shape and form was a matter of personal taste for me. I wanted to have a body style to match the era but at the same time one of some comfort for me.

The basic design features that I wanted to emulate had to include:

1. Overhead valve conversion of the era
2. Lowered suspension -front and rear
3. Extraction type exhaust
4. Wire wheels
5. Sporting-type body style

I succeeded in achieving all the above with my 1926 Model T Ford Speedster. It took me a total of four years to prepare, get design ideas, collect, restore, build and register for normal road use. And I am very happy with the result. It is now ready for our next rally.

There are many club members who are currently building or who would like to build a Model T Ford Speedster. Having just completed such a project successfully I would like to share my experience with other members as to how I went about the construction of this project. Here is the detailed construction story of my 1926 Fronty T Ford Speedster.

THE MECHANICALS

L BASIC ENGINE

I started with a 1926 motor with rear hogshead support mounting, 4-dip crankcase pan, transmission cover to suit, a Frontenac OHV unit for the Model T, and a Model A crankshaft.

Frontenac Cylinder Head

I obtained an original Fronty 8-valve head complete with aluminum cover, valve rocker gear, pushrods and valve springs. The Frontenac head was stamped as a "Model T [on the upper head flange] and I modified it to make it a "Frontenac Model R by planing off 0.125 to increase the compression. I also had to counterbore the pre-machined combustion chambers to 3.900 diameter by 1/8 deep to allow for the stroke of the Egge Machine Co high compression pistons [I used a bore size of 3-7/8 diameter, same as the Model Al. The compression ratio is now about 9:1 and pumps 175 pounds per square inch (PSI).

The rocker shaft and rocker arms were restored; the shaft reground and the rocker arms fitted with new bronze bushings, machined to provide 0.001 clearance. The rocker arm faces were reground to give a smooth movement over the valve end and the pushrod end. When I reassembled the valve rocker assembly, I placed a 1/16 thick shim under each of the four pedestal supports-the idea being to allow a small space for any oil to drain down the pushrod apertures and ultimately return to the sump.

The valves I used were stainless steel [spec. 21.4.N] 1-7/8 diameter head with 0.3415 diameter stem, overall length 5-17/32 , with grooves machined into the stem to accommodate the original taper collets (retainers). You can also use a Chevrolet 427 exhaust valve made by Manley or others, and modify to suit.

The length of the valve stem was important in the sense that as each activating surface of the valve rocker arm is a sliding surface, the lateral distance of slide could be minimized [thereby reducing friction, noise and power loss] by ensuring that "valve close position or height corresponds to the height of pedestal support plus half the valve opening.

New valve guides, using the originals as a sample, were machined from phosphor bronze with 0.001 clearance to the valve stem on all valves except for cylinders 2 and 3 exhaust valves [the inner valves] which had 0.0025 clearance.

For lubrication of the valve rocker assembly I used a 1 thick felt pad and attached this to the upper mechanism. This pad is regularly saturated in engine oil. To prevent oil seeping down the valve stems I installed rubber grommet wipers.

I used a modern 14 mm spark plug [Champion S9YC] using a permanently installed adaptor into the original 7/8 SAE standard spark plug thread. (Don t confuse this thread - 18 TPI - with a 7/8 SAE {UNF} [Note: United National Fine or UNF is Australian equivalent to SAE] which had 14 TPI.)

Crankshaft

I decided to use the more robust Ford Model A crankshaft and counterbalance it.

The "A crank is about 5/16" longer between the inner faces of No. 1 and No. 3 main bearings journals than the Model T crank, and of course has larger diameter main bearing [and big end] journals. It was important to ensure a modified "A crank had the same dimension between the outer face of No. 1 main bearing journal and the inner [and outer] face of the flange of No. 3 main bearing journal.

To achieve this requirement it was necessary in this calculation to use the lateral centerline between No. 2 and No. 3 cylinder bores of the "T" block to match the lateral centerline of No. 2 main bearing of the "A crank. Thus, the "A crank was modified and trimmed back in lengths both front and rear. Before commencing any work on the crank, I made sure it was not cracked. This can be done by modern crack testing means (magnafluxing). However, the enduring way is to hang the "A crank vertically by a wire and rap it with a metal object e.g. a hammer. If it hums for a time at both ends, it s okay. If there is a dullness of tune anywhere, discard it.

I was able to paper press the outline of a Ford Model C crankshaft counterbalance, and I subsequently used this profile on the "A crankshaft. I used a mild steel profile 5/8 thick plate to make the counterbalances. Using a cutting torch, I cut out the plate, machined, cut to shape, bolted to the "A crank with 2-1/2" x 3/8 UNF high tensile Unbrako setscrews, held in by Locktite and pinned by a heavy centerpop on the counterweight periphery. The counterweights were then MIG welded on the side faces to the crankshaft circular web.

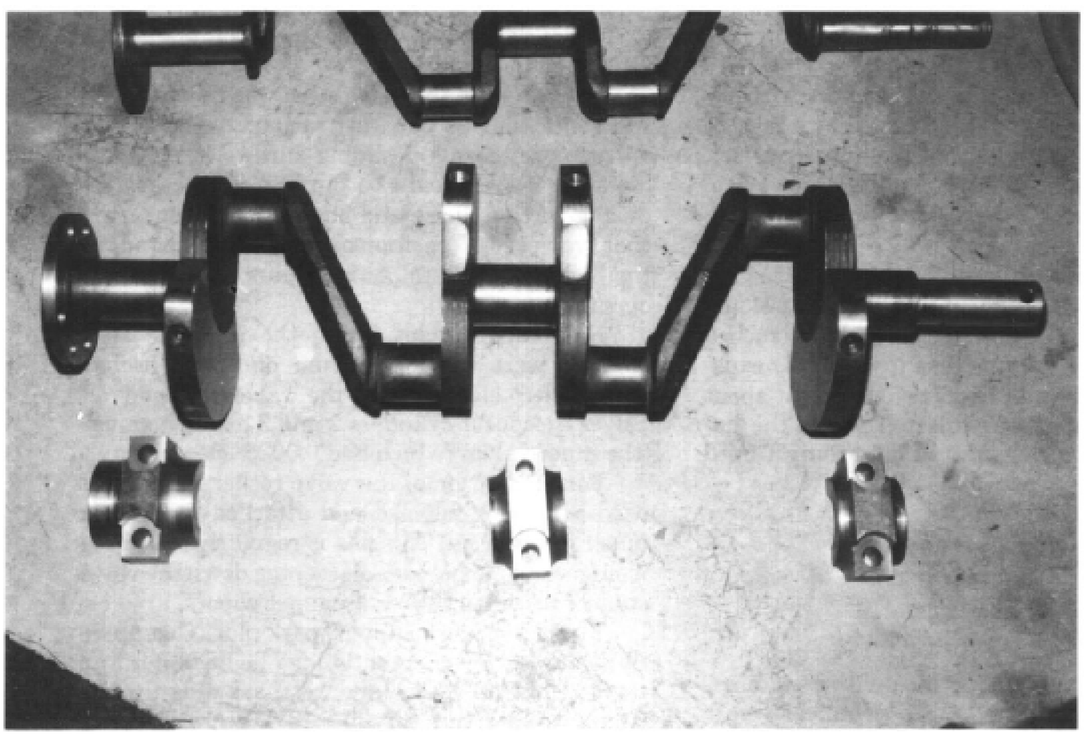
After all the modifications were completed the crankshaft was ground on all journals and rear flange thrust faces, then dynamically balanced.

Engine Block

I used a good 1926 engine block as a base for my engine. There were several machining steps necessary- n e w main bearing blocks, bearing bolts, line boring, metalling (babbitting), finish boring, cylinder reboring, and minor metal removal near the camshaft bosses.

The block was sandblasted and checked for any cracks, particularly in the bores (cylinders) and emanating from the exhaust valve seats. The block was then surface ground on the upper face to ensure a flat surface and also surface ground to a witness level [witness level, in this case means that the deck or top of the block was surfaced to be exactly parallel to the bottom flange1 on the lower machined flange. All tapped holes were then cleaned out with square bottom taps, and the head bolt holes inspected. Any worn or damaged threads were repaired with helecoils.

I made a new set of main bearing blocks and bolts. These were bolted to the engine block, match marked and line bored to 1-3/4 diameter. At this time, approximately 9/64 was trepanned off the inner faces of the main bearing No. 1 and No. 3 bosses and 1/16 taken off each side of the main bearing



Model A crankshaft with counterweights, together with main bearing caps. A standard Model T crankshaft can be seen at the top of the photo.

No. 2 boss, all to match the width of the new main bearing caps.

After tinning the bearing block and boss surfaces, new Hoyt 11D whitemetal (rabbit) was poured. I did not use any shims. After accurate setup in the line borer, using the camshaft hole as a reference for location, the main bearings were line bored to the correct size for the crankshaft with 0.0015 clearance and faced on No. 3 main bearing to provide 0.004 lateral clearance on the flange thrust face. Oil holes were drilled in the bearings and oil grooves were machined into the whitemetal (babbit) bearing surface of the block half.

When the crankshaft was trial fitted to the block, it was necessary to chip or grind a small amount of metal from the front inner boss of the camshaft journal bore and from the inner web of the block near the rear camshaft journal bore. This was done so that the counterweights of the crankshaft would be able to swing easily with adequate clearance in case of lateral movement caused by thrust forces from the helical gears of the crank-camshaft drive.

The cylinders were then bored and honed to 3-7/8 diameter to suit the Egge pistons, with a clearance of 0.002 . The original valve chambers and engine intake and exhaust ports were dressed up with “Frontenac aluminum covers from Bill Rader of Los Angeles.

Crankcase Sump [Pan]

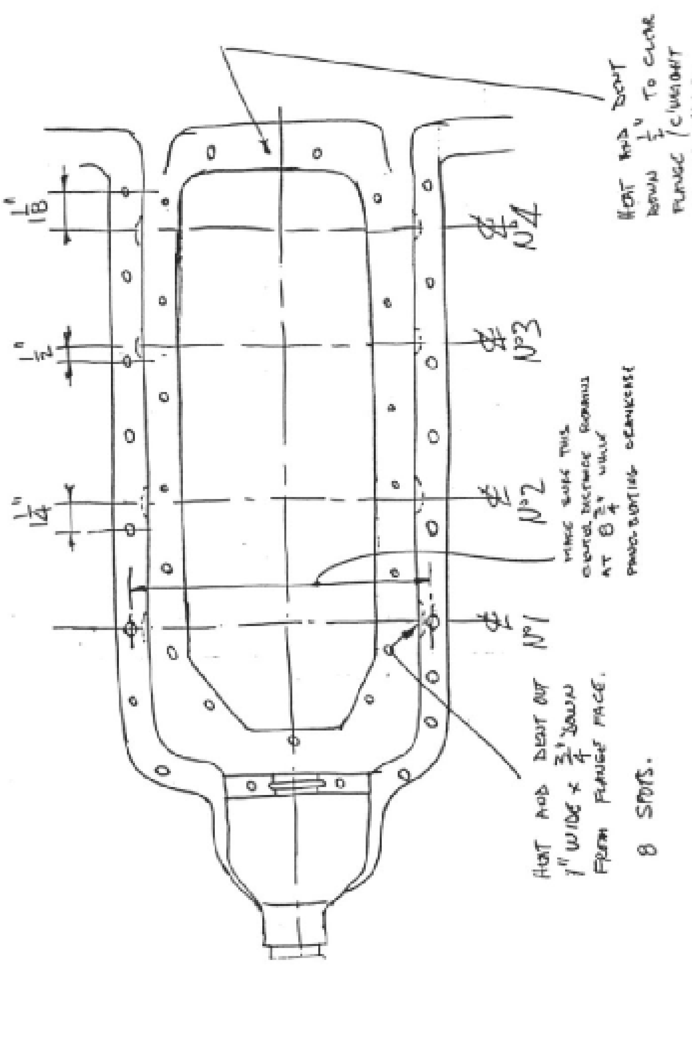
I obtained a 4-dip crankcase sump. Using the lower door gasket as a pattern I flame cut a 1/2 thick mild steel spacer and drilled this for the bolt hole pattern with 5/16 diameter holes. The original horseshoes were used and fixed in their location by two 1/4 BSW by 1/2 long CSK HD [counter-sunk head1 screws each. This was so they would not move when assembly was being carried out.

It was necessary to bell out, in four spots per side, a small area of the sides of the crankcase sump to clear the swing of the “A connecting rods and big end (rod cap) nuts. The location had to be accurate and after finally heating up the required areas to a red heat and using a ballpeen hammer the objective was achieved. The side widths of the flange was checked and brought back to correct dimension to fit the engine flange mounting.

It was also necessary to beat down the lower rear flange behind No. 4 big end on the crankcase sump. Plus, it was necessary to grind the 1/2" thick spacer in this area in order to clear the swing of the counterweight of the crankshaft.

Because I expected considerable engine torque, I decided to use flexible mounts for attaching the crankcase arms to the chassis. I used only one fixture per side-in the upper flange of the chassis using a radius rod ball cap spring and a 1-1/2 X 3/8 UNF hex head bolt, castellated nut and split (cotter) pin. This allowed considerable spring loaded movement without stress to the crankcase arms.

As well as modifying the crankcase sump/engine mounting, I added a crankcase support, the so-called “bra, which was also used in the old days to reinforce the crankcase arms and prevent them from breaking.

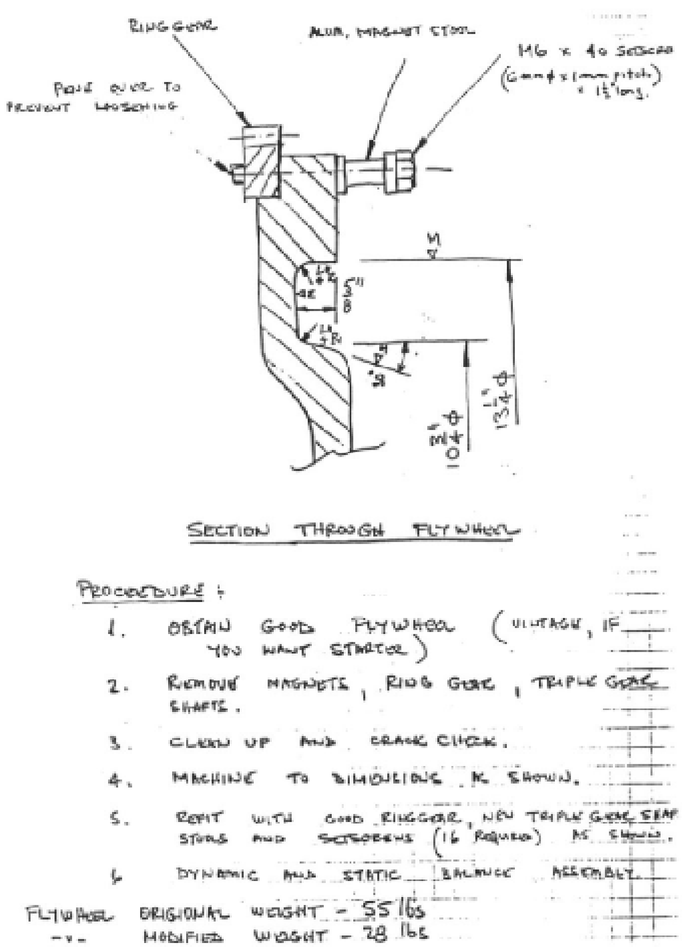


The oil pan had to be modified to clear the larger Model A crankshaft and connecting rods.

Flywheel

I used a standard flywheel. The magnets were removed and the flywheel cleaned and checked for cracks. I then lightened it by machining an annular ring 13-W outside diameter by 10-3/4 inside diameter by 5/8 deep with generous radii, all on the front face, i.e., opposite face to that on which the ring gear mounts.

I retained the 16 aluminum magnet stools and used M6 by 40 mm (very close to 1/4 x 24 TPI thread, as used by Ford) hex head setscrews to mount these and the ring gear to the flywheel. These metric threads have almost the same pitch as the original brass screws and bind only on the last turn which of course only tends to hold them tighter. They were then peened on the exposed end threads for security.



Procedure for lightening the flywheel.

I then installed new triple gear shafts to be certain any possible extra power would at least be equally taken on new components.

The flywheel was then statically and dynamically balanced. The rebuilt flywheel assembly weighed 28 pounds, a reduction of 27 pounds from the original rotating mass of 55 pounds.

Transmission

Here I used a standard pre-1926-27 transmission with the narrow face brake drum. The clutch spline surfaces were okay and I rebushed all bearing surfaces. The 1926-27 transmission would have been better only because these had “shoes on the clutch splines which didn t wear so much and were replaceable. The brake surface was not used. All these components were balanced before final assembly.-

I installed a “Jack Rabbit clutch which really is only a GM Turbo 400 or Allison disc set with the internal splines filed to match the Model T requirements. I used the heavy duty type with grooved faces. The eight clutch discs were soaked in heavy oil before assembly-heavy oil because it was to be some time between assembly and firing up the motor and I didn t want oil drained “bare faces which could have been the case with light oil, or no oil!

For the transmission bands [only low and reverse were used1 I used the new woven Kevlar linings obtained from The Rocky Mountain Machine Company of Colorado Springs, Colorado. The bands are mounted on “quick change bands.

The universal ball cap (4th main) was modified to fit a ball bearing [SKF 6010-2RS]. The modifications entailed installing a bushing between the transmission shaft and the bearing, a 1/4 thick flange spacer, and a sleeve spacer to locate the bearing and stop the inner bearing bushing from working forward on the transmission shaft and leaving the bearing and outer housing "high and dry.

Before I assembled the transmission, I checked the tension of the clutch spring-it was 110 lbs at 2 [minimum 90 lbs required]. Once assembled, I adjusted the “clutch finger gap to 7/8 rather than the 13/16 recommended. This resulted in a non-slipping clutch, very capable of handling the greater power of the modified engine. The transmission cover was only modified to preserve oil, i.e., stop the oil leaks on the shafts. For low speed and reverse shafts I used the “O ring trick inside the bracket flanges. The clutch shaft bore was machined out to 3/4 diameter and bushed back to 5/8 diameter-but cutting the bushing to allow a groove 0.093 wide in which an "O ring was placed. For safe measure I also used the duplex internal spring, washer and "O ring trick on the internal face. This has proved very satisfactory.

Camshaft

The standard Model T camshaft was refurbished by Wade Camshafts of Melbourne. The camshaft was built up and reground to a No. 102 grind with timing of 20/60 - 60/20 and a 0.263 lift at the lobe. That means-inlet opens 20 degrees before top dead center (TDC), closes 60 degrees after bottom dead center (BDC); outlet opens 60 degrees before BDC, closes 20 degrees after TDC. With a tappet clearance of 0.011 and a 1.5:1 ratio on the rocker arms, the valve opening is now 0.373 .

I used a good steel 3-spoke camshaft gear to match with a new crankshaft gear. I was told, if possible, to use a 4-spoke gear. I was also warned not to use a fibre gear.

Pistons/Connecting rods

I purchased a set of special pistons from Egge Machine Company of California. The pistons were 3-7/8 diameter, high compression, domed head with raised gudgeon (wrist pin hole) to suit the Model A connecting rod.

The Egge piston tended to pump oil without some minor modifications. These modifications included cutting a relief groove below the oil ring together with drilling oil drain holes on each side of the gudgeon hole outside the gudgeon retaining circlip (clip). I also had to relieve the dome of the piston back to 3.780 diameter so it would be able to enter [with clearance] the combustion chamber of the Fronty head.

Because the centerline distances are slightly different between the "T block and the "A crank, it was necessary to take off about 1/16 from one of the inner bosses of No. 1 and No. 4 pistons so that the gudgeon little end boss clears.

The pistons were match balanced to within 0.2 gram of each other. Assembling the gudgeon, I decided to use a Seeger internal circlip rather than the wire (wrist pin clip) circlip supplied by Egge.

The connecting rods used are standard Model A, of the H-type web. These were remetalled (re-babbitted) with Hoyt 11D whitemetal, machined to suit the crankshaft with 0.0015 clearance [here I used a set of Model A laminated rod shims] and oil ways were drilled and machined. The connecting rods were then matched and balanced within 0.5 gram total weight and big end/gudgeon [end for end] weights. I used 7/16 UNF Nyloc nuts (lock nuts using nylon plastic ends-used on aircraft and race cars) for big end nuts rather than the standard Model A with split (cotter) pins.

Oil System

I decided that the splash feed system would be retained but upgraded. I used a 1/2 diameter copper internal oil line with a large funnel mounted in the now free space between the engine block and the flywheel. Not using the standard Ford magneto meant that I dispensed with the magneto plate. This 1/2 line had to be "bruised in spots to clear the crankshaft counterweights.

The standard Model A connecting rod dippers now have a larger sump in which to take their oil supply.

I fitted an accessory outside oil line as well. Being 3/8 diameter copper tube, it takes its oil supply from the former magneto post connection on the transmission cover. I drilled/tapped a 1/4 BSP (British Standard Pipe-like ISP) hole in the lower part of the block just above the position of the crankshaft gear.

I also fitted an accessory transmission oil screen, which I have found very effective.

2. CARBURETOR AND FUEL SYSTEM

I acquired a NOS Stromberg MBI carburetor, which I used without any modification. I swivelled the air intake towards the rear and fitted it with an air cleaner. The carburetor fitted, with a short adaption piece, mounts directly onto the inlet connection of the Fronty head.

I used a 12-volt Autopulse electric fuel pump and adjusted the line pressure to about 1-2 PSI. A bowl filter was installed between the main cock under the fuel tank and the fuel pump. The fuel line to the carburetor was 5/16 diameter copper. I made a 1/4 diameter copper return line back to the bottom of the fuel tank in which I included a 1/4 needle valve which was cracked open for adjustment of return fuel flow. This line was necessary to relieve the pump pressure when the carburetor float was in the closed [or near closed] position, and thus prevent flooding.

The fuel tank was made of 2mm aluminum and glass beaded externally. It had dimensions of 14 diameter by 25 long and holds 14 Imperial gallons [approximately 15 US gallons1 of petrol. I mounted it on two small supporting saddles with 1 wide metal straps. All the surfaces were separated by rubber protector bands.

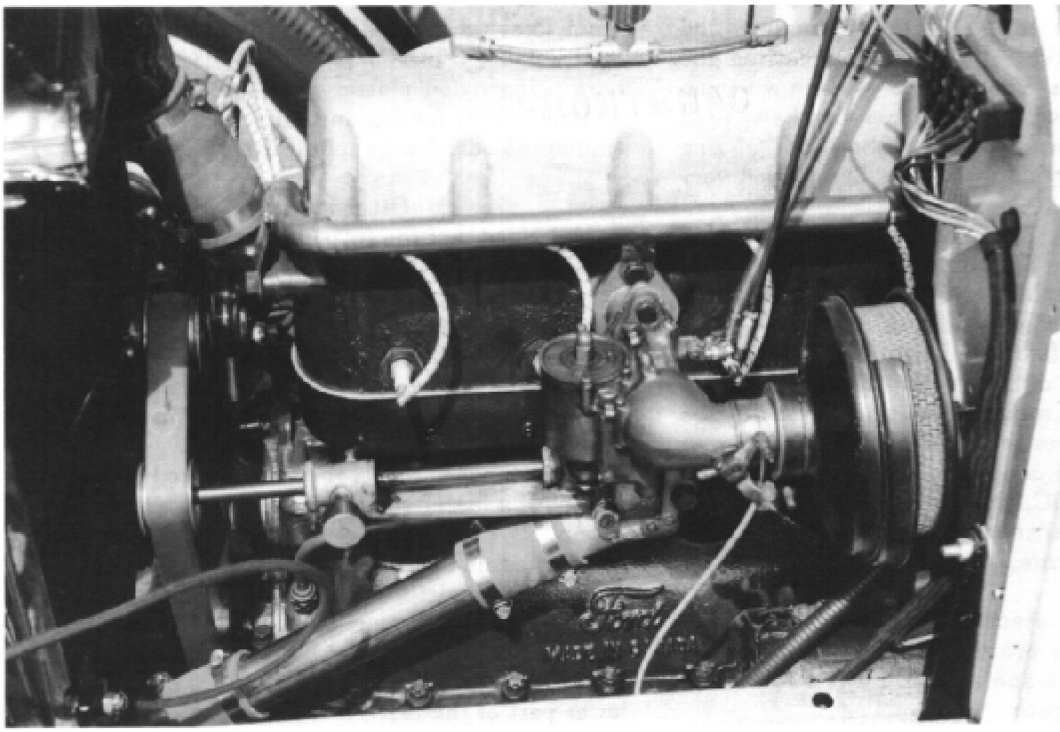


Photo shows the left-hand side of the engine with Stromberg MBI carburetor, air cleaner, and water pump.

side sealed.

At the pinion end of the driveshaft, immediately following the machined section, I cut a 1-1/16 - 12 UNF bastard thread and matching nut. Because the forged shaft varies from 1-1/32 diameter to 1-1/16 diameter it was difficult to stipulate exact thread outside diameter. The nut had an outside diameter of 1-11/16 by 3/4 wide with two 5/16 BSW holes tapped radially at 90 degrees to each other.

3. GEARBOX, DRIVESHAFT, DIFFERENTIAL AND REAR AXLE

To some purists I committed a sin! I adapted a GM Holden gearbox into the driveshaft about 12 back from the universal joint. I would have preferred a Ruckstell but this “setup" has proved practical and immeasurably cheaper to accomplish.

I won t go into too much detail of what I did. The gearbox was a GM Holden EJ to HR Series with aftermarket floor gearshift mechanism which I modified. I got all this in good condition at various swap meets. I also needed a matching clutch plate and universal shaft, of which only the female splines were of interest to me.

A Model T driveshaft and housing were cut to the appropriate lengths, flanges matching the gearbox welded and machined to the driveshaft housing and the female splines shrunk on and welded to the driveshaft. The weldings of the driveshaft were important and so a special welding technique was used as well as a low hydrogen alloy electrode.

What I did to the rear end of the driveshaft could be termed “modern T so I will describe this in detail. I used modem bearings-Timken taper roller bearing 15578/X523 [2-3/8 x1 x 5/8] and a ball bearing RLS 8 - RS [2-1/4 x1 x5/8] with one

I then made a special sleeve which fitted inside the driveshaft bearing housing the cup of the taper roller bearing fitted into the driveshaft bearing housing and the ball bearing fitted into the special sleeve, which in turn fitted into the driveshaft bearing housing.

Once assembled, including the Holden gearbox, the length of this drive train was exactly that of an original Model T driveshaft.

The differential is a standard Model T but uses thrust washers made from bronze. [I used a 3:1 crown wheel (ring gear) and pinion ratio.] The axle s outer roller bearings were replaced by adaptor flanges with sealed ball bearings 6006/2RS [55mm diameter x 30mm diameter x 13 mm] - two per side. As well, I made inner shaft seals using an Apache oil seal P 2151 [1-1/2 diameter x 1-1/16 diameter x 5/16] in a flanged housing, to stop the oil from being thrown onto the brake shoes and leaking over the wheel. The two grease cups were retained for aesthetic purposes but the screw lids were drilled with 1/8 diameter holes as breathers.

4. FRONT AXLE

I used a standard Model T 1926-27 front axle. This axle has a bow in it compared with earlier axles, and I think it was important to use this as it gives a little more clearance under the extended crank handle because of the lowering system described later.

Also, the 1926-27 stub axles are raised by 1/2 on the vertical member, thus providing a partial lowering of the chassis. The vertical member has a center which I drilled out and tapped 1/4 UNF and fitted a small greaser (grease fitting) to grease the king pin bushings. The wheels have to be turned for this purpose. I used 1926-27 wire wheel hubs in their standard form.

6. SUSPENSION - FRONT/REAR

Basically I lowered the chassis 5-1/2 front and rear, and the following describes how this was achieved:

Front

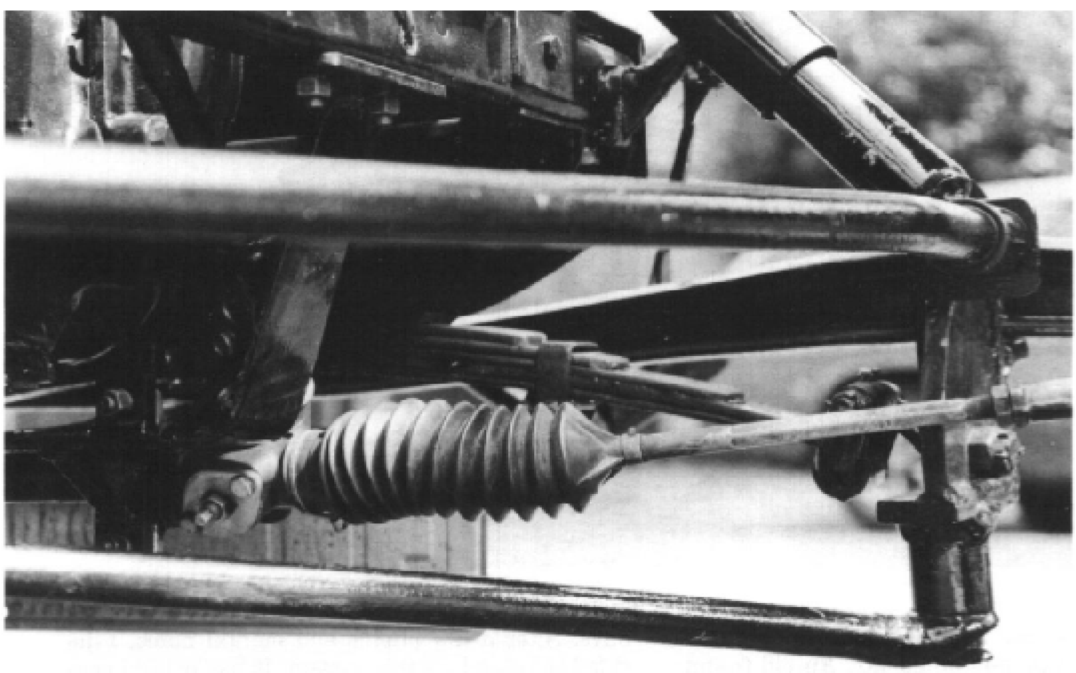
I decided to make the front axle lower by bringing the axle out in front of the chassis. I made up the 5-W lowering brackets from mild steel sections with an offset to allow for a caster of 3/4 [measuring the angle of the king pin] and by using the standard front radius rod. The axle was bolted into forward facing lugs on the brackets using 4 x 9/16" UNF high tensile bolts and castellated nuts.

As the axle perch mounting holes are 11/16 diameter I used some rolled steel bushings left over from tie rod bolt kits as bushing spacers. For the new front spring perch I used the 1909-25 rear spring perch and cut them in width to 1-1/2 . The front spring and spring mounting were standard Model T mounted in their original position. The lowering kit actually places the front axle 2-3/4 forward of its original position.

I welded brackets to the lowering kit to mount telescopic shock absorbers.

The shocks used were 1975 Ford Cortina double acting Armstrong 74BA-18077AIA. The chassis brackets for the shocks were made from 2 angle and side plate, the angle being bolted to the chassis and the side plates supporting the shock. Because the shocks were mounted at an angle of 45 degrees from the vertical, reaction forces would tend to twist the chassis, which when seen at this point is very weak in torsion, so I used a 1 x5/8 bar across the chassis behind the radiator but in front of the fan, bolting to the left- and right-hand shock mounting side plate. This has made the shock system very strong and effective.

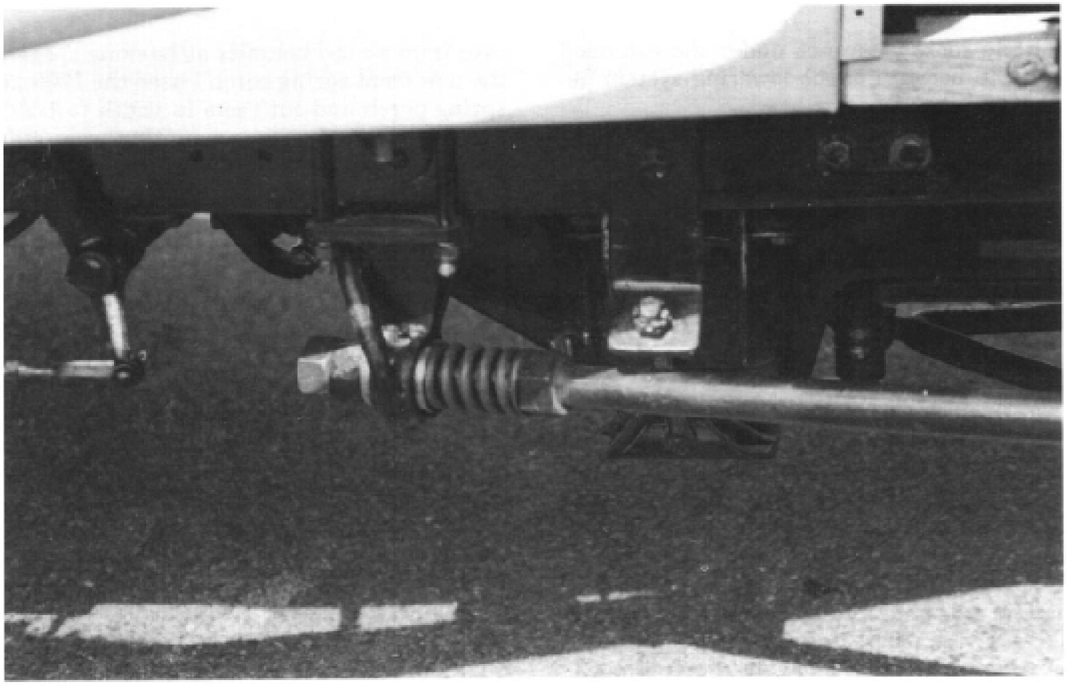
The radius rod ball mounting was upgraded, because this is where a lot of rattles originate on a rough road. I rewelded the radius rod ball and ground it to fit into a newly purchased brass ball-cap. It didn t have to be perfect-just fit and move without binding. I then used the brass ball cap upside down in the transmission sump mounting after grinding it to fit. It is invariably the case that these mountings are worn out to about 1-1/2' and the new cap fits easily.



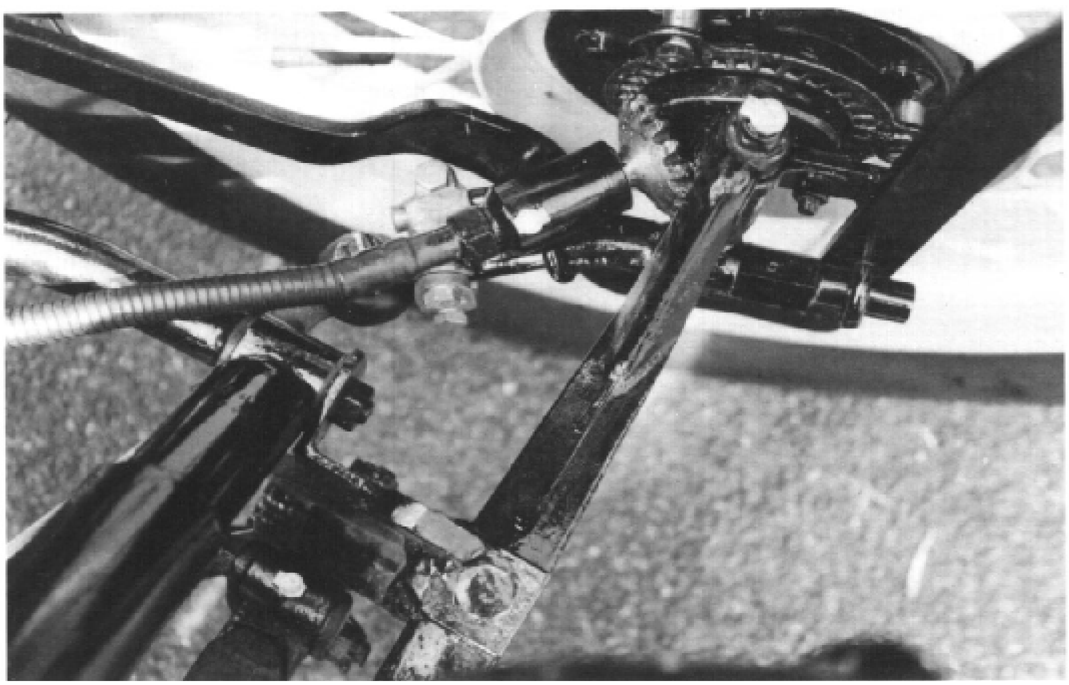
Front suspension with lowering bracket, shock absorber, and steering setup.

With an old steel ball cap, a 3/4 BSP socket, one radius cap mounting spring, some plumbing fittings and a machined brass ball retainer, I made a lubricated spring loaded ball cap which did the job silently.

The front suspension, however was



Above: *front axle support bar [spring loaded], crankcase support and radius rod mounting.*
Below: *Left-hand front axle mounting with speedometer drive and fender support.*



still in need of some reinforcement-especially when travelling over pot holes, etc. An old friend had an interesting setup on his racer-a spring loaded stabilizer bar system as was used in the old days. After a few photos and mental notes, I decided to reproduce this system. It has proven very effective. The mounting brackets bolt to the chassis at the body attachment lugs and to the front axle, just outside the perch mounting holes.

The stabilizer bars were made from 3/4 diameter steam pipe welded at the spring loaded flexible jointed body end to a 1 diameter bar screwed 1 UNF. The springs were made from 5/16 diameter spring steel and work over the 1 diameter bar. To allow for suspension movement the chassis mounting brackets were slightly concave, with matching convex washers; the whole assembly consisting of 1 UNF nuts, locknuts, washers, mounting and spring.

Rear

The rear suspension was standard Model T spring with shockers, and chassis lowering of 5-1/2 .

The 1921-25 chassis lowering was simple. I removed the rear crossmember by grinding off all the rivet heads and punching out the rivets. I then made mild steel brackets which, in effect, merely lowered the chassis by 5-1/2 . I bolted everything back again by using 5/16 UNF hex head high tensile bolts with spring washers.

The shocks used were 1975 Ford Cortina single acting Armstrong AR71BB-18080AIA The upper mounting was a 1913-25 front fender bracket cut just above the head lamp mounting hole. These were bolted to the side of the outriggers of the rear 1921-25 chassis cross member, with 3/8 UNF bolts. The lower mounting was a shaped angle bracket attached to the rear axle in company with the rear radius rod mounting bolts. Thus the rear shocks are in front of the rear axle and at an angle of about 20 degrees from the vertical. They clear the axle and the chassis and look and work well.

6. BRAKES

I decided I wanted better than the Model T band as a brake, particularly as I could get "angel gear (neutral) through the gearbox, so I decided on juice brakes. I used 1956 Ford Fairlane (Australian Ford) hydraulic brakes and integrated/adapted these into the 1926-27 rear axle brake mounting flange. It wasn t easy but the results were very rewarding. The Fairlane brake shoes are 11 diameter by 2-1/4 wide; the drums are 11-1/2 diameter which match closely the 1926-27 drum diameter of 11 .

I adapted the 1926-27 wire wheel hubs by making a 5/8 thick spacer ring and redrilling the Fairlane drum to suit the T bolt pattern. The labyrinth dust seal on the Fairlane drum was removed and the drum was reduced in width by 3/8 , as were the brake shoes-the latter simply by cutting with a hacksaw and trimming up.

Then it was an awkward job to fit the Fairlane brake plate to the 1926-27 T axle flange, the main problem being that the Fairlane brake plate didn t have too many flat surfaces. Anyhow with an oxy torch and some rewelding the job was done.

The Fairlane brake plate was mounted at 90 degrees to its "born position; that meant the hydraulic wheel cylinders are not up top but at the rear of the T axle. The only problem was that bleeding the wheel cylinders had to be carried out before bolting them in place. That was okay, because I used the flexible hydraulic hoses between the wheel cylinders and the axle [the Fairlane brakes I picked up at a swap meet came from the front wheels].

I was able, with some ingenuity to retain externally the T hand brake system by making a series of bars and levers similar to those used in many post war cars where a hand brake mechanism was inside the wheel drum.

Now for the foot brake/master cylinder. As you might have noticed, I did not continue with the T transmission band brake. I used the transmission cover brake aperture as a mounting for a 5/8 diameter shaft on which the brake pedal pivoted. The T brake pedal was modified by first removing the pedal shaft, then welding on a lever in line with the pedal arm protruding down 4-1/2 below the pivot point. I then used a clevis pushrod from this lever point direct into a dual cylinder master brake unit. The master brake unit was mounted onto the front running board cross member with a suitably strong bracket, and in line with the brake pedal lever so there was a direct in line movement.

I only used the rear of the dual master cylinder, plugging up the front section. A rigid steel brake line was run from the master cylinder to a point near the universal joint then a flexible line from there to behind the front mounting of the rear radius rods, where I mounted a T banjo, and from there in rigid steel along the inside of each radius rod to the rear axle where the previously mentioned flexible connection took over. All steel lines used flared connections and were neatly attached at appropriate intervals to the radius rods.0

In the next issue, we will complete Ken s speedster and show you the finished product. The next issue will wrap up the mechanical details and review the building of the body. Many photos!

A reminder--renew your membership to the Model T Ford Club of America so that you will not miss the remainder of this article.