Dairyland Tin Lizzies Model T University

January 21, 2017

Another Model T University tech session was put on by the Dairyland Tin Lizzies on a not-too-cold Saturday Afternoon on January 21, 2017. There were about 25 avid and enthused Model T'ers present.

The first topic was How to cure the "Death Wobble" in Model T's. Almost all of us who have driven Model T's for some time have experienced this very unpleasant condition. It usually happens after going over rough railroad tracks, and suddenly, the front wheels and the steering wheel shake back and forth, sometimes violently. To stop the shaking, you have to stop the car completely, and then you can go again, at least until the next time it happens.

This "Death Wobble" can be fixed. It is caused by wear and looseness in any part of the steering system from the front wheels all the way up to the steering gear case under the steering wheel. Often, just some wear in more than one place in the steering is enough to cause it.

Jim Hess and Keith Gumbinger discussed the most common wear places that cause the Death Wobble, and how to fix them. This isn't rocket science, and most of these repairs can be done by the average Model T'er. A handout was given out listing nearly all of the Death Wobble causes. Each item on the list should be checked for wear or looseness and fixed as needed.

Some-times the death wobble is caused from using the wrong front end parts on the car, as several front end / steering parts changed over the years. The Drag Link and Pitman Arm are good examples of this, as the wrong parts can be interchanged on different year Model T's.

Jim stressed that after the axle and spindle are re-bushed as needed, that the surfaces between the spindle bushings and the axle must be parallel. If there is a wear ridge on the axle or if the Stevens bushing protrudes out from the axle, they must be filed or machined as needed so that those surfaces are parallel. If those surfaces are not parallel, excessive wear will result, shortening the time until the next axle and spindle repair is needed.

Jim described a good method to tighten the spindle bolt (aka King Pin). After the axle and spindle have been re-bushed as needed, and all the surfaces on the spindle bushings and the axle are parallel, then install the spindle bolt, but leave the nut on the bottom off at this time. Put a .002 (two thousandths) feeler guage between the spindle bushing and the axle and tighten the spindle bolt so it is just snug – with a slight drag on feeler guage. Next, with the feeler guage still in place, put the nut on the bottom. Hold the spindle bolt from turning with a wrench on the top, and tighten the nut on the bottom so it is TIGHT with the .002 feeler guage in place. The feeler guage should just have a slight drag on it when it is removed. Line up the nut with the cotter pin hole and install the cotter pin. When this is done there should be no more than .002 clearance, and the spindle should move smoothly with no binding and no vertical movement at all.

An intermission was held between today's discussion topics and snacks were served. Thank you to Pete Humphrey for bringing the snacks!

The second topic was about Holley NH Carburetors. Kevin Bruso was the presenter for this topic, and he began by describing the Bernoulli principle of restricting air flow in a passage which results in a pressure differential causing low pressure after the restriction. This is the basis that these carburetors operate with.

Kevin showed an example Holley NH carburetor and pointed out the 3 internal passages that have to be cleaned out. Professional carburetor rebuilder Stan Howe uses worn guitar strings of 3 different sizes to clean these passages. Some of these passages have plugs on the carburetor exterior that have to be drilled out. After the passages have been cleaned, those holes can be re-plugged using pieces of brazing rod. Stan Howe taps those holes and uses hex head plugs in them to make their removal easier the next time.

An impromptu rear axle diagnosis was done by Greg Zangl on a rear axle brought by someone who couldn't get the felt retainers off from the outer ends of the axle housing. Those blankety – blanks were really stuck on. Greg used a big pipe wrench on them and everything, but they just would not come off. They took the whole rear end to Greg's place to work on it later.

Besides the tech sessions, there were some tools brought for display. Rich Edler brought a nice display of Walden – Worchester Model T tools, most of which were on a nice display board. These tools were from the estate of our late member, Rod Prinsen. Rich generously donated these to the Model T Ford Club of America Museum in Richmond, Indiana, specifically for the "Model T Garage" project presently under construction. They will be displayed in the Model T Garage with a plaque stating that these tools are from the Rod Prinsen estate. Thank you Rich for this excellent donation!

Afterwards, several of us went to dinner at the Omicron Restaurant, and a good time was had by all.

Many thanks to all who helped put this wonderful event on, including Kevin Bruso, Jim Hess, Keith Gumbinger, Pete Humphrey, Greg Zangl, and to Joe Vrana for the use of his shop.

Submitted by Keith Gumbinger

DEATH WOBBLE IN MODEL T'S

A partial list of conditions that can make it happen

1. A broken or bent front frame cross member

2. The spring center bolt not properly seated in the front frame cross member or wrong spring center bolt, spring center bolt nut not tight

3. Worn kingpins and / or kingpin holes in the front axle

4. Worn spindle bushings /spindle arm bushings

5. Worn bushing in the lower steering column bracket

bracket not tight to frame, wood block missing

6. Worn spring perch bushings and / or spring shackles
   Spring shackles too tight, restricting spring
   Movement, loose spring perches in the front axle,
   bent spring perch allowing the spring to ride on the
   axle

7. Pitman Arm, worn ball or loose on steering column
   Shaft, wrong Pitman arm for the year of the car

8. Wishbone, worn ball / socket, or worn holes / loose nuts
   On the spring perches

9. Worn gears and / or pins in the steering gear case
10. Spring leaves broken / spring clips missing or loose,
    spring flattened out, needs to be re-arched

11. Tie Rod, wear on the ball and / or ball cap, Tie rod
    Yokes, bolts or nuts worn or loose

12. Front wheels and tires not balanced, bearings loose or
    Worn, bearing races loose or worn, Wheel Hub
    and / or spokes and / or fellow loose

13. Toe in on front wheels not set properly

14. Loose front engine mount at the oil pan

15. Wishbone socket & oil pan bent to the rear, caused by
    hitting an immovable object

16. Loose nuts or bolts at any of these locations, missing cotter pins

17. Drag link sockets worn, wrong length for year of car

18. Bent front axle

Some Model T's have a shock absorber type device on the front axle to help dampen the "Death Wobble". This is not a fix as it only covers up the problem. It is always best to fix whatever the problem is, then you won't need any damper device.

KNG 1/21/17