



Thunderbird Flyer

Newsletter of the Northwest Vintage Thunderbird Club

VOLUME 37, ISSUE 2

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SPECIAL POINTS OF INTEREST:

- **World of Speed tour with the Edsel Club February 21st! Details on back page.**

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Livin' the Lie!

Tell me if this sounds familiar. Your wife starts to tell you about the neighbors remodeling an upstairs bedroom or maybe a downstairs family room. She starts to describe certain features inside said house. You nod like you understand all she is telling you. Problem is you have never been past the front door of your neighbors house.

Well, maybe you made it into the living room during the last Super Bowl, but that's been it.

Speaking for myself, I find it unusual that I would ever venture that deep into someone's personal space. I think it is written in the Bible, you know, "Thou shall not kill", "Thou shall not covet your neighbors goods", "Thou shall not go into your neighbors master bath".

Maybe the reason I don't venture into other peoples houses is the panic that my wife exhibits when someone is going to drop in on short notice. Everyone is placed on red alert to straighten things up and put things away. As I am jamming dishes into the dishwasher I wonder why we have to do this? Doesn't a messy house go hand in hand with kids and life? The people dropping by have kids, I think, so wouldn't their house look similar to ours? Then I'll comment on how by doing this "we are living the lie" as I scoop up the newspapers from the floor beside the couch. This just elicits "the look". You know that look guys, the one that makes you scamper away like a guilty little puppy.

But I have to ask myself if I am a hypocrite?

Recently I was flying with a captain and we were talking about cars, trucks, machinery, my garage and his shop. He commented that he would be embarrassed if I was to see his shop right then. The amount of projects he had going on and the disorder that he had left things in before he left to go to work was not what he likes to do.

I thought of the condition that I had left my garage in. There is a large portion of the interior and dash from the Thunderbird covering my workbench right now. The front bench seat of the T-bird stands guard over the engine and transmission protecting them from the errant trash can or bicycle nudge.

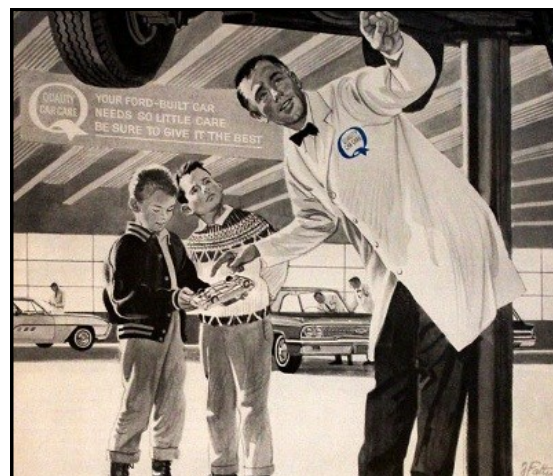
The gas tank rests on a stand which is trying to occupy the space of the media blaster cabinet. The trunk of the car looks like it is vomiting out all the tail light and body trim pieces. And the rear axle has more mileage resting on the rolling jack than it did on the car. This is not how I would like people to see my garage.

So I have to reconsider my wife's attitude. If one of you told me that you'd be stopping by to look at my garage, I guess I would be running around like a chicken with it's head cut off trying to put things in order. I'd be living the lie myself.

So here's to all the weekend warriors and hobby mechanics who dream of a 10,000 square foot, well lit, heated workspace. I applaud your gumption to work on a car which requires blankets on the hood and foam pads taped to the door edge. You are my kind of car people and you are welcome to come to my garage any time.

Just let me move the trash cans and pick up the air hose so you don't trip and hit the car.

Tom

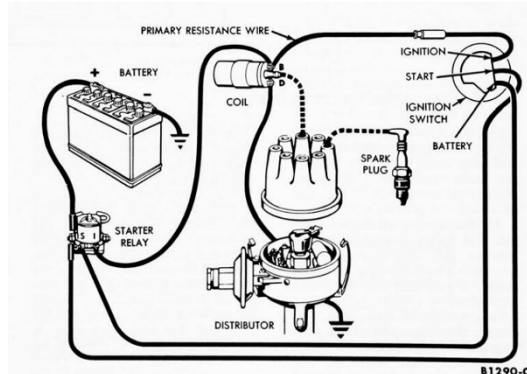


Real mechanics only wear white coats and bow ties in the garage!

The Ignition System

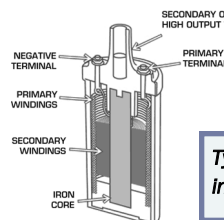
So far we have checked the health of the cylinders and inspected the spark plugs for any tell-tale signs that our FE 390 would need more than a tune-up. This month we'll look at the ignition system and verify that it is operating normally. Again, we are assuming that the engine runs okay and is just in need of a tune-up.

The ignition system in your Thunderbird is typically known as breaker type ignition (a transistor ignition was optional for some model years but we won't be going into these). The ignition systems purpose is to provide the electricity that goes to the spark plugs. But wait, doesn't the battery/alternator do that? They do, but remember that gap that was set on those spark plugs last month? The 12-14 volts that the battery/alternator provides is just not enough electrical force to bridge that gap and create a spark. There needs to be a much, much larger voltage to do that; like 20,000 volts!



The ignition system relies on two main components to create the high voltage spark; the coil and distributor.

The coil and distributor are the components of the ignition system that accomplish a voltage multiplication. Inside the coil is an iron core that is enwound or "coiled" by two metal wires. One winding is the primary winding and is wrapped several hundred



times around the core while the secondary winding is wrapped several thousand times around the

Typical coil has 100 secondary windings for every one primary winding.

core. When a pathway to ground is made through the ignition components, the primary winding will have 12-14 volts from the battery/alternator flowing through it. As the electricity goes through the primary winding a magnetic field is produced that surrounds the secondary winding. At this point the distributor steps in to do its job.

Inside the distributor is an assembly that holds two arms, each holding a contact or "breaker point". An eight sided cam driven by the rotation of the engine causes the "points" to open and close. When the points come in contact with each other a pathway is completed which allows electricity to flow through the coil and go to ground. When the points break contact or open, that pathway to ground is broken and the flow of electricity stops. As the electricity flows that magnetic field grows, when it stops it collapses. That collapsing magnetic field creates a flow of electricity in the secondary winding. With the many more windings in the secondary a larger voltage is produced.

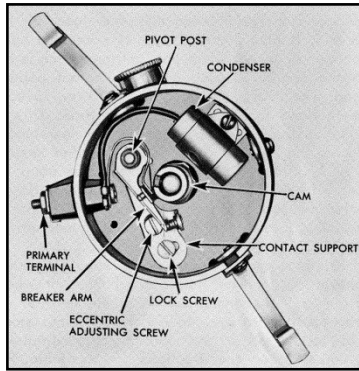
The high voltage coming from the secondary winding is routed to another part of the distributor called the rotor. The rotor is attached to the same cam as the breaker points are. The rotor directs this high voltage to one of the spark plugs in a set firing order. A very good video of this sequence of events can be found [here](#).

Everything to develop a spark must occur within milliseconds over a variety of engine speeds and cylinder pressures and temperatures. And the system as designed works very well. Problems with the coil or ignition switch usually show as the engine not running at all since they prevent spark creation. The Ford maintenance manual discusses how to test these components if they are suspected to be faulty. Under normal operation the distributor experiences the most wear and tear so this is the part of the ignition system we'll look at most during this tune up.

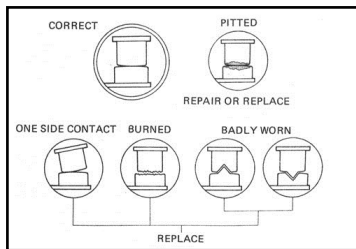
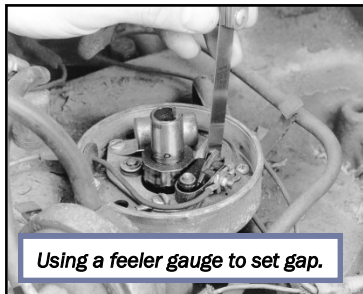
The distributor does not need to be removed to check it. In fact, by removing it there is a chance of changing the way it meshes to the engine and affecting the timing of the spark. The only thing you need to do to inspect the parts of the distributor is to remove its' cap. The cap is secured by two spring clips that can be pried away. Place the cap away

...a spark must occur within milliseconds over a variety of engine speeds and cylinder pressures and temperatures.

from the distributor making sure that none of the spark plug wires are disconnected. Inside you'll see pieces like the diagram to the right. This diagram does not show the rotor which simply slides off the shaft that holds the cam. This will give you some more room to inspect the other parts.



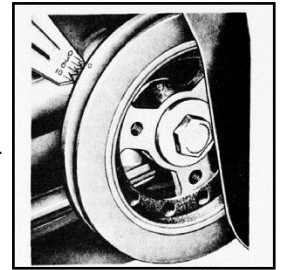
Typically, points will last around 10,000 miles. Regardless of age, inspect the points. Under normal use the points may have a slightly rough surface. If the points appear burned or pitted there are other underlying concerns. Excess oil and grease inside the distributor can be thrown onto the points where it is burned. Pitting may be caused by misalignment of the points (replacement points and condenser are around \$20). After inspecting and/or replacing, use a feeler gauge to check for a gap of between .014"-.016". The screws securing the breaker arms to the distributor base can be loosened to adjust the arms to the proper gap and then retightened. If the points do not align squarely, you may have to bend the stationary breaker arm with pliers so that the points line up like the top left example in the diagram to the right. A dwell meter (if one is available) may be more convenient for setting the gap than a feeler gauge but you'll be pretty close. If you end up replacing the breaker



point assembly in the distributor you'll have to lubricate the pivot points and moving parts. Be careful to use lubricant designated for use in distributors. Some lubes like engine oil or dielectric grease can be slung around inside the distributor and cause problems like burned points described earlier. Other parts inside the distributor like centrifugal and vacuum advancements can be inspected for movement but we won't really know how well they are working until the engine is running. So there is a possibility that you will have to go back into the distributor to repair or replace these parts. For now though, place the rotor back on the cam and replace the cap. We can now operate the engine to check and adjust the ignition system.

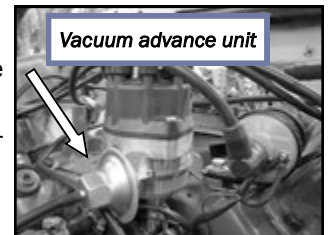
I have seen homemade timing lights but one can be found at most auto parts stores for under \$50, even cheaper at garage

sales. A lead from the timing light is clipped onto the #1 cylinder spark plug lead. Whenever high voltage electricity goes through this spark plug lead the timing light emits a strobe of light. Right behind the fan at the front of the engine is a pulley that is rotated by the engine crankshaft. There will be some arrangement of numbered markings or an indicator mark on the pulley similar to the picture to the right. These are timing marks that indicate numbers of degrees before the piston reaches top dead center in the cylinder. These markings can't be seen with the engine operating except for when the timing light's strobe effect makes the markings appear motionless. If the timing is correct the pointer will indicate 8 degrees before top dead center. If it is off, there is a hold down clamp at the base of the distributor that can be loosened. This allows the entire distributor to be rotated clockwise and counter-clockwise. Doing this allows the timing to advance or retard. With the timing light pointed at the timing markings you'll see the mark move. Adjust the distributor until the setting is correct and tighten the hold down clamp.



The last item we'll look at are the devices that advance the timing of the distributor. As the engine turns faster the pistons move faster in the cylinders. This requires the distributor to apply the high voltage electricity to the spark plug sooner so that proper combustion in the

cylinders can be maintained. A way to adjust the points while the engine is operating is necessary. One way this is done is by a centrifugal advance. Flyweights are attached to the cam in the distributor. As the flyweights rotate faster they "fly" out and cause the cam to rotate on the shaft which advances the timing. There is also a vacuum advance that reacts to the load placed on the engine by sensing much air is flowing through the carburetor. An increase in airflow creates more vacuum from the carburetor. A diaphragm in the vacuum advance moves a lever which shifts a plate that the breaker point assembly is attached to which also advances the timing.



Testing these advances is pretty easy. First, disconnect and plug the vacuum line to the vacuum advance found on the side of the distributor. Have someone start the engine and step on the throttle while you point the timing light at the previously discussed timing marks. As the engine accelerates you should see the timing mark move slightly. The mark should return to normal when acceleration stops. Reattach the vacuum line and rerun the previous test. There should be an even greater advance of the mark. Specific degree advance figures are provided in the Ford maintenance manual in Section 9-3.

Tom Przedwojewski writes from the cold recesses of his garage.

LEGO + Ford = Fun

Befriending someone who enjoys turning wrenches will lead to some interesting conversations. During that “get to know you phase,” one of the questions you will likely find yourself asking is “So what got you into cars?” Most of the time you will hear words like “Hot Wheels,” “Micro Machines,” or “Big Wheels,” with all of them serving as a huge influence: All three of those toys are the kind of wholesome fun that do foster brilliant automotive minds. But every now and then, someone will say that playing with LEGO kits as a small child inspired them to build bigger when they grew up, or at least Ford is hoping they will. On the eve of the Detroit Auto Show, Ford and LEGO announced they were joining forces in a partnership that makes two of the automaker’s most iconic modern vehicles from the 2016 North American International Auto



Show far more affordable and easy to parallel park. Unleashing both the new Mustang and the redesigned F-150 Raptor onto toy shelves across America later this year, LEGO and Ford say that this collaboration is a multifaceted move designed to celebrate iconic Ford vehicles, offer fresh LEGO ingenuity, and market both brands on a broader scale. Plus, for some strange reason we get the feeling that kids won’t be

the only ones pining for these cool sets.

Both kits are reportedly slated for release nationwide on March 1 in both LEGO stores and Toys “R” Us locations, and outside of all the little LEGO Maniacs anxiously waiting in line, we’re sure that a few Raptor and Mustang enthusiasts will be making some purchases that week as well. Designed to appease the kid in all of us, Ford says that by working with LEGO Speed Champions it is able to “bring the excitement of the racetrack to people’s living rooms with the first-ever Mustang and F-150 Raptor LEGO sets.”

Designed as an affordable beginner kit, the 185-piece Mustang set come complete with a time board, torque wrench, and fully helmeted race driver. LEGO’s second offering is a bit more complex: A 664-piece set which includes the 4×4 Raptor truck, a trailer, an illuminated drag racing Christmas tree, a Model A hot rod with all the

proper trimmings, plus a paddock filled with every tool required to keep the race in full swing.

“The LEGO Group is one of the world’s top toy companies, and is loved by children and adults around the globe,” says Joe Hinrichs, Ford president of The Americas. “Many of us grew up playing with LEGO, so this is a dream project for all of us – including our engineers.”

The Denmark-based LEGO team supposedly worked very closely with Ford’s licensing and design teams on the project, with both development and product design remaining a collaborative priority in order to make the miniature versions of the vehicles look as authentic as possible. Everything from the positioning of lights and the slope of the fender flares to the packaging and marketing materials were analyzed repeatedly before getting a green light, all in hopes of offering enthusiasts both young and old the most authentic toys possible. With a suggested retail price of \$14.99 for the Mustang set and \$49.99 for the F-150 Raptor kit, these are by no means the most expensive LEGO options on the shelf. So chances are quite good that both collaboration pieces will sell well. Secondly, the proper branding and packaging of these kits is a far more influential marketing ploy than you might think; kids who love these kits will likely grow up remembering that Ford Raptor LEGO set, and how it inspired them to one day own the big-boy version. Then you have the enthusiasts. Guys who own Mustangs and/or Raptors, who want something cool to show-off on a shelf in their garage or man cave to prove that you can never be too young to have fun. Then, with a little luck, someday their offspring will be allowed to play with said LEGO sets, completing the cycle and inspiring the next round of Ford enthusiast.

If all goes well with the preliminary duo of trial sets, there is a solid chance that more brand specific kits will roll out with vehicles like the new GT likely making the cut. Then maybe, with a little bit of luck, we will one day see some larger kits from Ford, similar to the Porsche 911 GT Finish Line kit.

“We are excited about the new LEGO Speed Champions sets based on iconic Ford vehicles,” says Jill Wilfert, vice president of licensing and entertainment for The LEGO Group. “Each LEGO Ford car tells a story and has infinite play possibilities. With these new sets, kids can play out their ultimate car fantasies. They are able to role play and become the LEGO mini-figure, stepping into the greatest cars on earth.”

Micah Wright writes for the Auto Cheat Sheet web site. This article was written on [January 16th, 2016](#) and is reproduced with permission from the Auto Cheat Sheet.

...there is a solid chance that more brand specific kits will roll out...



Even though a “Thunderbird” Lego kit has not been made, it doesn’t mean you can’t build one! Here are models of a RetroBird and Thelma and Louise’s Flairbird.



Winners and Losers - 2015

Not only does Hagerty insure classic cars, they also issue a respected collectible car guide. The company analyzed 2015 sales figures to find the biggest winners -- and the biggest losers.

Keep this thing in mind when you see their results; public auctions provide a big chunk of Hagerty's data, and while such sales can give a good idea of where the market is heading, they represent only about 20% of cars changing hands in a given year. Private sales make up the bulk of transactions and they're harder to track with any reliability.

Hagerty says that while overall North American sales are up (\$1.45 billion compared to 2014's \$1.31 billion), it seems to be driven by cars at the high end of the market. Median prices for cars sold were only up 4 percent and fewer cars were sold overall.

While the various Thunderbird model years appear to be remaining steady (or maybe stagnant if you are trying to sell!) the big winner is the Retro Birds. A concours quality vehicle increased from \$24,700 at the beginning of 2015 to \$32,000 at the end of the year.

With the 2016 auctions kicking off in Arizona, a new set of buyers and sellers will be trying to make the best deal. We'll see if the trends continue.

- 1. 1974 - 1977 Porsche 911 (+154%)
- 2. 2004 - 2009 Aston Martin DB9 (+141%)
- 3. 1984 - 1996 Ferrari Testarossa/512 TR/F512 M (+98%)
- 4. 1975 - 1985 Ferrari 308 GTS/GTB (+69%)
- 5. 1990 - 2001 Lamborghini Diablo (+65%)



- 1955-1957 Baby Birds +5-7%
- 1958-1960 Square Birds -0%
- 1961-1963 Bullet Birds -0%
- 1964-1966 Flair Bird -0%
- 1967-1971 Glamour Bird -0%
- 1972-1976 Big Birds -0%
- 2002-2004 Retro Bird (Concours quality) +29%



- 1. 1946 - 1952 Hudson Commodore (-36%)
- 2. 1968 - 1975 BMW 2002 (-33%)
- 3. 1976 - 1986 American Motors CJ-7 (-32%)
- 4. 1957 - 1958 Studebaker Golden Hawk (-30%)
- 5. 1955 - 1957 Chevrolet 150 (-27%)



Who says you can't have a modern GPS accurate speedometer in your classic car? The makers of **DigiHUD Speedometer** (free and Pro versions on Android only) have created a speedometer alternative that combines speedometer, compass, trip meter, digital clock and overall speed and odometer statistics. You can also set speed reminders that will sound if you exceed a set speed. But the coolest feature is being able to reverse the screen orientation, place your phone on the dash and have the indications reflect off the windshield; just like a heads up display!



Reviews have been favorable with a couple of concerns to note. One is "burn-in"; a discoloration of parts of the screen when the display does not change for long periods of time (probably during long trips with brightest display setting). The other is that constant GPS use depletes the phones battery at a faster pace.

Easy to use and accurate, **DigiHUD Speedometer** offers for free (and without any ads!) the full functionality of other speed indicators. And the great thing about it is that it's portable, so you can use it with any vehicle, even buses and trains. This is a great app to have just to verify the accuracy of your speedometer.



The Federal Trade Commission (FTC) amended its fuel regulations to require more specific information be posted at the pump regarding the amount of ethanol that has been added to gasoline at levels above 10% (E10). First established in 1979, the FTC's "Fuel Rating Rule" specifies methods for rating and certifying fuel along with labeling requirements. As of July 14, 2016, ethanol contents ranging from 11% to 83% will be called "Ethanol Flex Fuels" and must include the text "Use Only in Flex-Fuel Vehicles/May Harm Other Engines." SEMA supports the FTC's amended rule as a way to raise consumer awareness at the pump, since ethanol causes metal corrosion and dissolves certain plastics and rubbers, posing harm to older vehicles that were not constructed with ethanol-compatible materials.

NWVTC Meeting Minutes

Attendance: Tom Przedwojewski, Eric Johansson, Vicky and Steve Wimsatt, Matt Truax, Griff Truax, Dave Coles, Jim Muir, Mike Hinsch, Ron and Leisa Zegers, Guest Speaker- Neil D'Autremont.

Jim Muir, one of the club's newest members was at his first meeting. Jim has a 1963 Landau that has been a "project" for more years than he cares to talk about. Jim stated that he hopes membership in the club motivates him enough to get going on this project. Ron and Leisa Zegers are back with us after a year hiatus. Since they have been gone they have added A/C to their Thunderbird so those summer drives will be more enjoyable.

Guest Speaker Neil D'Autremont, owner of Sidedraught City, told us about his new shop located at 9125 SE 64th Ave. Suite #1, Portland, OR 97026. This new shop has more room and better lighting for demonstrations of the automotive detailing products sold at Sidedraught City. He has invited the club back for another session early this spring. Details to come soon.

Mike Hinsch reported that the Edsel Club has invited us to attend the World Of Speed Exhibit in Wilsonville with them on Sunday February 21st at 10am. There is a 45 minute guided tour during the 2 hour visit, possible restaurant stop afterwards. Reservation is for 35 folks though more could be accommodated. Tom will put out a reminder and collect names of those interested in attending. We'll need to have a list of names to Mike at least a week in advance. Group discount is \$1 of regular admission.

Eric Johansson presented a "How-To" on correcting a faulty (or just old) turn signal relay and sequencing unit found in 1965 and later Thunderbirds. Aftermarket sequencing units are available from other vendors also if your old one needs replacement. An article describing these are on the club website.

Griff Truax came across a unique problem that he had never encountered, or even realized existed, when he was working a customer's speedometer assembly. He brought the problem to the club to see if we could figure out what he found out. The picture to the right is of the odometer wheels from the same model and year Thunderbird. Can you tell from the picture why these are not interchangeable? Answer is on the back page in the "Passing Lane" section.



The first months of the new year are the time to renew your memberships with this club and our parent organizations; the VTCI and ITC. Not only is the NWVTC growing but so are the international organizations.

If you are a member who has already renewed, THANKS!



If you are interested in joining the VTCI or ITC, the links are on the next page and you can use the forms to join or renew. This gives you access to club magazines, shows and forums dedicated to enjoying your Thunderbird. You can renew your club membership on our website also.



Calendar of Events

Club Meetings

- **February 16th (Tue)** Regular Club Meeting, Bird Nest, West Linn, OR
- **February 21st (Sun)** World of Speed Tour w/ Edsel Club, Wilsonville, OR

VTCl Events

<http://vintagethunderbirdclub.net/events.htm>

- **April 27th-May 1st, (Wed-Sun)** SE Regional, Chattanooga, TN
- **June 2nd-5th (Thur- Sun)** SC Regional, Norman, OK
- **August 10th-14th (Wed-Sun)** 2016 International Convention, Kansas City, MO

ITC Events

<http://www.iintl-thunderbirdclub.com/index.html>

- **September 13th-18th, (Tue-Sun)** International Convention, Bethlehem, PA

Car Shows and Events

- **February 6th (Sat)** Salem Collector Car Auction, Salem, OR
Further information at petersencollectorcars.com
- **February 20th-21st (Sat-Sun)** 10th Annual Salem Roadster Show, Salem, OR
Further information at salem-roadstershow.com
- **March 18th-20th (Thur-Sun)** 60th Annual Portland Roadster Show
Further information at mhrc.org

These are not all the events in the area. If I have missed any that you think the club members would like to know about send in the information and I'll put it in the list! If you attend an event snap a picture or two and write up something for the newsletter. Each event has a certain flavor and we all like to find a fun and interesting event.



2016 Executive Board

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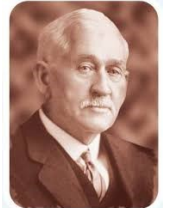
Treasurer Vicky Wimsatt

Web site/ Newsletter Tom Przedwojewski



Find us on the web at
www.nwtbirds.org

In 1888 in Toledo, Ohio, a doctor specializing in treatment for ear, nose and throat disorders had a problem. The doctor was frustrated with his efforts to medicate his patients' sore throats. If he gave them medication in liquid form, it quickly passed over their throats and was swallowed. To alleviate this, he combined a rubber bulb, some tubing and the base of an oil can to invent the first atomizer. By squeezing the bulb, air was propelled over the top of the tubing, lowering the atmospheric pressure and causing the medication to rush upward to fill the partial vacuum. Once up into the air stream, the tiny atomized particles of liquid medicine rested on the inflamed tissue of the patient's throat long enough to do some good. In 1907, the doctor's son, Thomas, expanded on his father's invention by using compressed air blowing across the top of a pickup tube submerged in liquid. Though we have all used an atomizer, some of us have used Thomas' device to a greater extent. Perhaps you've used a paint spray gun from the company that bears the name of the inventor; Dr. Allen DeVilbiss!



For your entire club apparel needs; hats, shirts, jackets or even backpacks, go to **Stitch-n-Embroidery**. Order on-line, over the phone or in person. Delivery to the next club meeting is available. Tell them you want the NW Vintage Thunderbird Club logo!



stitchnembroidery.com/index.html



Club Meeting Times

There will be a couple of times to get together this month.

The first will be our regular monthly meeting on 16th at 7pm at Bird Nest, 1091 Willamette Falls Dr., West Linn, OR.

The second time will be at the World of Speed Museum in Wilsonville, OR on Sunday the 21st at 10 am. This tour is being put together by the Edsel Club and they would like us to let them know how many are going to join them. Let Tom know by the 14th if you are planning to attend.

Passing Lane

fun and funny stuff from the road



Answer: Notice how the numbers are ordered on the wheels. The top odometer needs to roll up to go from 0 to 1 while the bottom one would need to roll down to go from 0 to 1. Griff was not able to determine when Ford may have changed this but since there is no difference in the speedometer cable that goes from the transmission to the speedometer head it must have been determined that nothing needed to be mentioned in any manual.

