

Automotive Technology Program

Advisory committee meeting minutes from December 13th 2017

Members present Jose Castillo, John Miller, Will Mobley, Ryan Thompson, Oliver Taylor, and Ken Rocha.

Call to order 6:25pm

Action items:

1. Approval of the minutes; motion to approve by John Miller seconded by Jose Castillo, approved unanimously.

Discussion items:

1. Equipment and Curriculum Updates

Mike recapped the use measure Q bond money for equipment upgrades and continued to say that from the allocated 350K, there is 14K unencumbered. When asked about the timeline to use that money he reminded the committee that there is no time line. 1234yf refrigerant and related equipment is being priced out for purchase with some of that unencumbered money.

Ken asked if we had any vehicles running that refrigerant, and Mike's response was that we do not at this time but the goal is to acquire them in the future. The main idea is to purchase the equipment now while we have the funds to do so and acquire the vehicles later on. Mike also brought up the fact that sometimes the students can work on their own vehicles and some may be running that refrigerant already. As well as the hybrids that will be part of the HEV program that will most likely be running that refrigerant from the factory.

Discussing the AT-12 brakes class, Anibal informed the committee about the incorporation of the Pro-cut brake lathe machines into the curriculum, while maintaining drums machining with the bench lathes. Time permitting the students also learn how to machine rotors on the bench lathes. Continuing on with the brakes class, Anibal wanted to get feedback from the committee regarding brake bleeding procedures and the tools used. Some of the members volunteered that both pressure and vacuum brake bleeders are used on a regular basis. The popular one used was manufactured by MALHE. The members also agreed that scan tools usage during brake jobs is a regular occurrence now. Whether it is to retract rear calipers or to reset the brake pad indicators or even fluid quality indicators.

Regarding the AT-14 manual transmissions class Mike talked about the successful purchase and incorporation of the T-5 manual transmissions so that students can disassemble and reassemble the transmission to support the theory portion of the course for better learning. Also, ford service sets for the 8.8 rear axles were purchased to further enhance the learning experience for the students and that it was received well by the students.

The AT-16 Electrical systems class- Mike reminded the committee members of the previous purchasing of the Consulab Modular Trainers. Mike relayed to the members how the Consulabs have enhanced theory knowledge through immediate practical application through these learning modules. Followed by on car exercises really drives the ohm's law, voltage drops and related theories home. Building circuits and basic testing on the Consulab Trainers has been instrumental to the students' learning.

Ken Rocha shared that having a grasp on electrical theory is a must. He also said that some manufacturers do not provide diagnostic flow charts anymore, leaving the tech to work from their own understanding of how electrical circuits function.

Mike reiterated that reading wiring diagrams are emphasized heavily in our curriculum as well as the theory and that by the end of the semester they are able to diagnose lights, switches and wiper circuits.

AT-18 Engine repair class- Mike said that the program could benefit from newer engines but regardless the class focus is in vehicle service and repair such as, cooling system service, coolant and oil leaks, timing belts, oil changes, valve adjustments and routine maintenance. And lately we have been benefitting from donations like those coming from Harper Ford.

Will Mobley said that he would look into any possible lien sale donations that he may have.

Ken Rocha said the same.

Mike said that would be great for the program. Real fixes with students are great learning experiences. Sometimes we get great deals, Mike talked about the Pontiac with an electrical issue, the 2006 Ford Explorer with the over drive issue. These are great for diagnosis and are valuable for the programs. Mike also expressed the need to replace the older vehicles with newer ones. Mike then continued on to say that in the AT-18 engine repair class the students also take an engine apart, do precision measurements, which are great for skills development. Even though we have some decent 05' and 08' engines on stands now from the now defunct UC Davis Engineering Program, we are always looking.

Will Mobley said he might have some Hyundai engines for us.

Mike said that he would come by and talk to Will and others about any possible donations.

AT-20 suspensions class- Anibal asked the group if they've noticed any of their new hires lacking in any areas of suspension work or general knowledge. Perhaps proper disassembly and reassembly of certain common components like control arms or struts. The group said that so far their guys are well versed and are knowledgeable.

Anibal then asked what the group thinks about trainers as visual aids during lecture and if those types of teaching tools would be cost effective.

Oliver Taylor volunteered that it would be good for them to see the geometry and the alignment angles and how they influence each other.

Anibal then enquired about the brand of alignment machines that are in their shops, if they use Hunter or John Bean.

Some group members said that they use Hunter or they sublet. Most consider that type of equipment too costly and too big they take up a lot of space in the shop.

Anibal asked if there was a particular type of job that they see repeatedly that they would like the program to emphasize more.

Will Mobley responded with ball joints and inner axle seals are particularly popular.

Jose followed saying that having that disassembly and reassembly knowledge is always welcomed but sometimes its faster to just replace a loaded component that comes together as a unit as opposed to just a spring for a strut that would require disassembly.

Oliver also said that having a good understanding of what is loaded or under pressure is crucial for safety.

Anibal also wanted to know about scan tool usage for suspension.

Ken Rocha said that Toyotas need scan tools for steering wheel position sensors, Mike also said that anytime you do a power steering rack on a Prius you need to follow up with calibration procedures that require a scan tool.

Anibal asked about any tools or equipment that is popular for power steering work specifically system flushes.

Ken Rocha said that his shop uses an RTI flushing machine. Mike wanted to know if there was another machine that they used to remove and replace power steering fluid on a regular maintenance interval. Will said that about every 30K power steering services are a regular thing. He also invited us to come down to the shop to take a look at their shop and tools for a better idea of they use on a regular basis.

AT-22 Electronics- Mike said that there is too much hybrid electric covered in that class that takes away from more automotive electronics. One of the reasons for him developing the hybrid electric program for the college.

AT-28 Advanced engine performance- Mike said his students enjoyed learning more about the Pico scope and the use of pressure transducers. Being able to sync certain signals with others on one scope screen has been great for determining VVT issues and a great learning experience for all. Even though it may be more advanced for most it really gets the students excited about diagnosis.

AT-26 A/C and Heating- Mike restated that the 1234yf machine and related tooling will possibly be purchased with the remaining measure Q funds as was mentioned earlier in the meeting.

Ken Rocha followed by stating that it's a great skill to have to be able to diagnose an A/C system. Not just the refrigeration but also diagnosing electronic blend doors and associated systems. He also said that it can be tough to do so. That you have to know how to test for their operation, scan tool or not.

Mike said that our fleet of cars have a mix of systems from mechanical to electronic but that we could always use newer vehicles to teach on resetting controls.

AT-30 Automatic transmissions- Anibal told the group that the curriculum now includes the fluid exchanger that was purchased by the measure Q funds. He also expressed the need to update the transaxles and transmission to include contemporary electronically controlled transmissions. Doing so would also require incorporating some scan tool usage for diagnosis in that class as well. Anibal then asked the members if they had any specific areas that the program should focus on regarding transmissions. Ken Rocha said that one of his guys worked a transaxle not too long ago with out too many questions and that it went well. He said that the last one that tech had worked on was probably at CR in AT-30.

Mike wanted to know about where techs were getting service literature.

Ken asked Will if he had a transmission guy, Will said that the minor stuff is fine but major overhauls are not typically done for warranty purposes. Especially for out of state customers.

Jose followed by saying that typically major overhauls have turned into a remove and replace scenario instead of overhauling the transmissions. That way the warranty is good and it doesn't fall on the shop but rather on the company that supplied the transmission, like Jaspers.

Both Oliver and Will said that the industry is getting a little out of hand with denying access for repair work on some of the newest transmissions. They both said that some manufacturers are requiring Lock Smith licenses just to purchase parts for some transmissions. These are necessary to program newer transmissions after the physical part has been replaced.

While talking about transmissions and flashing modules Oliver suggested to get a trusted power supply which is unlike a typical charger to keep the battery voltage during both programing and or diagnosis. These power supplies provide clean voltage without many fluctuations. Will Mobley suggested one from Midtronics.

2. Strong Work Force

Mike updated the committee on the HEV program funded through the initiative. He said that logistics in setting up a functional program has hit a few road blocks. With lower diesel being tied up in the middle of a UIR process. This has been the case for several years now. Regardless Mike said that he is working to set up the program as far as he can go with the shop and the space we have available now. The main issue is safety. Mike said that leaving high voltage parts exposed around others who are not savvy to the inherent dangers is a recipe for disaster.

Mike said that in his conversation with a CIO Angelina Hill the idea of leasing a space in town came up- at which point John said that it would cost thousands of dollars to set up an maintain that new space all the while having an empty space like lower diesel right here on campus.

Will asked about dedicating a stall from the auto shop and wall it off for the HEV class. Mike replied saying that the shop is too small as it is and to take a stall away would impact that side of the program even more.

Mike said that he has so far been doing a lot of research on which electric vehicles would be best suited for the program concluding that the Chevy bolt, Nissan leaf and Toyota Prius were

the contenders. And that purchasing will most likely happen in spring. Mike was also interested in any Chevy direct training for the bolt and Will said that Chevy is even letting independent shops get factory training and that he would look into training for Mike via the dealership. Mike also said that training for Anibal is something else to pursue as well.

John Miller said that he looked at a list of HEV available worldwide and that it's a substantial list. Tons of HEVs worldwide and that demand for service is equally substantial.

3. Roster for the next two years 2018-2020.

Mike asked the committee members who would like to come back for another two year commitment while also stating that we will look for a few new members as well.

Oliver, Ken, John, Jose, Ryan, and Will all said they would stay on for two more years.

Meeting was adjourned at 8:26pm