

West Michigan POCI  
1586 Ridgecrest Dr.  
Zeeland, MI 49464

# The Arrowhead

West Michigan Chapter



February 2021

## Chief's Chatter

### **Scott Van Tamelen- WMPOCI President**

Here we are, two months into the New Year, and well? Not much has changed. Gatherings of large groups are still discouraged, restaurants are still restricted from having indoor seating, and Pontiacs are still the badass cars. Ok that last bit I may have ad-libbed a little, but if we didn't have humor in times like these where would we be?

I heard from Doug Troost last week, he was rubbing in how warm and sunny they had it down in Florida. He also wanted to inform me that we have a new split in the club, we're calling it the West Michigan Pontiac Club-Southern Branch. (LOL! Just to clarify that is a joke too)

It seems we currently have more members temporarily residing in Florida than we have here in Michigan. Many of them are planning to get together down there as a group to see one another. So in some ways, I guess the club is going to have a meeting before March after all.

Unfortunately, I don't see that happening here in Michigan. Given the extended State restrictions I think it would be unwise to try and hold a meeting in February. I hope that maybe by March we can figure something out. I've been in contact with several of the staff members, as we still need to plan events for the year. I'm going to look into creating/holding a Zoom meeting with those members. Depending on how that goes, we've discussed using that platform to hold a club meeting. We'll keep you posted on that.

If you haven't checked out the club's Facebook page lately I encourage to do so. I've been trying to keep it active with different bits of information, and questions. It's another way to stay engaged in the social element of the hobby.

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Since we didn't have a meeting for Dan Jensen to submit his notes, we have asked him to share something he wrote for another purpose. So here is that submission.

### 1965 GTO 389 Tri Power Dyno Test

When the GTO was introduced in 1964, the factory brochure called it "A device for shrinking time and distance." The standard engine was the 325-hp (@ 4800) version of Pontiac's venerable 389 line-up. Optional was the 348-hp (@ 4900) Tri Power engine. These engines made 428 lb-ft of torque, but at 3200 and 3600 rpm respectively. Thus, the "musclecar" as we know it was born.

Improvements were in store for 1965. Changes were made to the heads, intake and camshafts. The standard four-barrel engine now made 335 hp (@ 5000), while the Tri Power made 360-hp (@ 5200) with its new "068" camshaft. Torque was now 431 lb-ft @ 3200 for the four-barrel, and 424 lb-ft @ 3600 for the Tri Power.

Jim Mattison, owner and president of Pontiac Historic Services, is the owner of our subject engine. It will be installed in a '65 GTO he is restoring, and while it was out of the car to be rebuilt, we took the opportunity to put it on the DTS Dyno at Pierce Race Engines in Lansing, MI.

The engine had been rebuilt with cheap, sixty-over generic cast pistons with eight (!) valve reliefs so they could be used in both the early and late engines which have different head/valve relationships. The problem with these pistons is that all those valve reliefs add up to 14.3 cc's! Despite the added cubic inches, now at 400 CID, with 71-cc combustion chambers, standard Fel Pro head gaskets, and ten-thousandths deck clearance, compression came in at 9.0 to 1.

We were able to locate sixty-over forged 389 pistons with the proper valve reliefs for the early heads. They still had four reliefs, but they were only 6-cc's in volume. Fortunately, Pierces was able to hone the bores with a deck plate and get the proper piston to cylinder wall clearance for the forged pistons. The piston change alone jumped the compression up to 10.0 to 1, almost too much for the engine to be compatible with the 93-unleaded premium fuel we were going to feed it on the dyno. We could have cut the heads and deck to achieve the factory 10.75 compression rating, but that would have required a diet of race fuel added to the premium unleaded.

The cam that was in the engine before the rebuild was deemed too big for our application, especially with the lower compression ratio. It had 228-degrees of duration at .050" lift, and .480" lift at the valve, on both intake and exhaust. Jim wanted the stock 068 cam back in the engine, which has 212-degrees on the intake and 225-degrees on the exhaust at .050" lift. Valve lift was now .414" and .413" respectively.

We checked the carburetors and they still had the original jetting of 63's in the center, and 68's in the ends. We didn't have an assortment of jets in case we had to adjust the air/fuel ratio while on the dyno, but fortunately that wasn't the case.

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## Membership Info

Chapter Dues are to be paid January 1st  
\$25.00 payable to WMPOCI

Please give to Brian Martinie at the meeting, or mail them to:

West Michigan Pontiac Club  
430 E 8th St, PMB 157  
Holland, MI. 49423

National Dues are YOUR responsibility.

You must be a member of the  
National POCI to be a member of the West Michigan POCI.  
Log onto [www.poci.org](http://www.poci.org) for more information or to register

### WMPOCI MEMBERSHIP APPLICATION

Name \_\_\_\_\_ Spouse \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

Full Member (Chapter & POCI) \_\_\_\_\_

If full member include your POCI# \_\_\_\_\_

Non POCI member (Chapter only) \_\_\_\_\_

Pontiac Owned \_\_\_\_\_

Year \_\_\_\_\_ Model \_\_\_\_\_

Style \_\_\_\_\_ Motor \_\_\_\_\_

National POCI # (must have) \_\_\_\_\_

Birthday \_\_\_\_\_ Spouse's Birthday \_\_\_\_\_

Anniversary \_\_\_\_\_

\$25.00 Payable to West Michigan Pontiac Club

## Care Corner

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*We intend to include announcements whenever we learn of a serious illness, accident, surgery, or death of a close relative of one of our members. Please inform a Board Member if you have an item to share.*

### **REMINDER!!**

**The annual dues of \$25 for the West Michigan Pontiac Club are due in January. Since there is no meeting you should mail them to Brian Martinie at the following address.**

**West Michigan Pontiac Club  
430 E 8th St, PMB 157  
Holland, MI. 49423**

Check out our latest events and activities on our website  
[www.wmpontiac.com](http://www.wmpontiac.com).

### **Preamble**

*The West Michigan Chapter of the Pontiac-Oakland Club International is dedicated to the ownership and preservation of Pontiacs, all models and years.*

*It is the goal of the chapter to encourage and unite area Pontiac enthusiasts in Chapter sponsored activities and events.*

*The Arrowhead serves as one of the tools to which the Club can fulfill its goals, as well as, provide information.*

### **Club Officers**

President	Scott Van Tamelen	616-450-8450
Vice President	Bob Walker	616-293-9308
Treasurer	Brian Martinie	616-836-6040
Secretary	Dan Jensen	517-896-0398
Arrowhead Editor	Judy Hirdes	616-772-5494

### **Dan's Story Cont'd.**

Entering all of the engine's data into our Desktop Dyno program predicted that our 389 would make 344 hp @ 5000 rpm and 428 lb-ft of torque @ 3500 rpm. Remember, this is with a reduced compression ratio of 10.0 to 1. Just raising the ratio to the advertised 10.75 increased output to 358 hp @ 5200, and 439 lb-ft @ 3500, just about matching the advertised horsepower of 360!

We run our engines with the fuel pump (but not hooked up to the fuel), water pump, alternator (acting as an idler), and fan belt in place, so there are some horsepower losses. We also begin all our dyno sessions running 2.5-inch straight pipe off our exhaust manifold downpipes. Later we switch from the 2.5-inch straight pipe to six-inch diameter "header" pipe. We believe the 2.5-inch pipe replicates a decent, older dual exhaust system, while the bigger pipe performs similar to today's high-tech, high-flow systems.

Though the pictures don't show it, we made all our early runs without the air cleaners installed. Setting the full mechanical advance to 36-degrees BTDC with our stock points distributor, we let the engine warm up on its diet of 93-unleaded.

For our first baseline pull, we set the rpm range from 3200 to 5000 rpm. Our dyno operator, Jim Nordhof, went to wide open throttle and the 389 made a nice song as it revved up through the rpms. The first thing we noticed after the pull, the maximum hp was made at 5000 rpm, so we'd have to raise the upper limit for the next pull. Considering this was the first run, and the rings wouldn't be seated for another couple pulls, 324.4 hp is not too bad. Torque was 391.1 lb-ft @ 3600, a bit less that we expected. Brake specific fuel consumption (BSFC), which is a measure of power output per unit of fuel consumed, was at .44, a tad lean for a 10.0 compression engine. However, we didn't detect any detonation or pinging.

We raised the upper rpm limit to 5200 for our next run with no other changes. Again, the peak hp was reached at the end of the pull, this time making a better 329.7 hp @ 5200. Torque was a bit better too, coming in at 392.4 lb-ft @ 3500. For some reason, the BSFC's came up to a safer level at .48, perhaps because the carbs were working better than on the first pull.

The upper rpm limit was raised to 5400 rpm, again with no other changes made to the engine. Jim let her rip, this time the peak hp rpm was lower than the rpm limit. We would keep 5400 as our max rpm for the rest of our testing. We hit 331.6 hp @ 5300, and our average hp made for the rpm range came in at 300.5. Peak torque was up too, reaching 395.1 lb-ft @ 3500. Average torque for the pull was 370.4. BSFC's were rock steady at .48. These will be the numbers we compare our changes to.

Considering that the BSFC's looked optimal and were plenty safe at .48, we agreed that the first change would be to advance the timing from 36-degrees to 40. A lot of engines like the additional timing, but not this one. HP dropped back to 327.7 @ 5200, and the average down to 295.7, a drop of about 4 and 5 hp respectively. Cont'd on Page 4

### Dan's Story Cont'd

Torque got nailed too, lowering the peak to 386.8 lb-ft @ 3600, about an 8 pound loss. Average torque fell by about six to 364.3 lb-ft. A true indicator of lower power is the BSFC number going up to .49, telling us that the engine wasn't utilizing the fuel as efficiently.

If 40-degrees was too much, maybe it would respond better to 33-degrees. It only took a couple minutes to make that change and soon the 389 was running at WOT again. This time, the engine responded in a positive manner making the highest peaks and averages so far for both hp and torque! Hp came in at 333.2 @ 5100, the average increasing to 302.6. Torque was up to 400.7 lb-ft @ 3500, and the average up to 373.4. BSFC's dropped back to the normal .48.

Out of curiosity, we jumped the timing back up to 36-degrees and were convinced this is where the engine was the happiest. Peak hp didn't change much, almost identical to the prior pull, hitting 333.1 @ 5100. But the average hp number told the story better, going up to 303.6. Likewise, peak torque was close to the last pull at 400.0 lb-ft @ 3500. Again, it was the average number telling us that 36-degrees was more agreeable, reaching to 374.4. BSFC's maintained at .48.

Now it was time to make some noise by replacing the 2.5-inch straight pipe with the 6-inch header pipes off the exhaust manifold downpipes. This allows the engine to breathe easier, usually dropping the BSFC's. We were wondering how much! Jim let the engine rip, and it sounded great! We hit our high numbers for the day in this configuration. Peak hp reached 341.0 @ 5200, just three shy of the Desktop Dyno prediction. Average hp came in at 308.1. Torque maxed out at 403.3 @ 3600, the average up significantly at 379.9 lb-ft! BSFC's dropped slightly to .47, confirming that the engine was making better use of the fuel.

At first we were somewhat disappointed by the lower than expected torque output by the 389. Remembering from above that Desktop Dyno predicted 358 hp if we raised the compression to 10.75, when we calculate torque at this compression (coming up with a ratio from our best pull - {403.3 lb-ft/341.0 hp}\*358 hp) we come up with 423.4 lb-ft, so within 1 lb-ft of advertised. We aren't disappointed now.

For our last test we wanted to see what the three little chromed air cleaners would do to our power output. They look pretty, but would they help direct air into the carbs to boost power? Nope, but they didn't hurt it too much either. HP dropped a couple to 338.8 @ 5200, the average at 305.6. The drop in torque was a little more, but nothing alarming. Peak hit 400.6 lb-ft @ 3600, and the average at 376.6. BSFC's were maintaining at .47 indicating good use of fuel. I'd run the air cleaners if it were my car!

Tri Power fans shouldn't be disappointed. We feel this engine, built to run on 93-unleaded using correct parts, makes what it should. No more. No less. Installed in Jim's '65 GTO, it should have no problem ripping off low 14, or high 13 second quarter mile times. Sure, not the fastest car on the planet, but still a great "device for shrinking time and distance"!



## CLUB EVENTS

A schedule for 2021 will be developed by the new Board as soon as possible.

**If you have a suggestion for a meeting topic or an event to consider for this year, please contact any board member with the information.**

### Chief's Chatter Cont'd.

As we move further into the year you're likely to see some refinements in the newsletter again. I feel that during these times of inactivity it becomes even more important to provide a publication that is informational, educational, and enjoyable to read. In order to do that we need members to provide us with write-ups that might be of interest to others. Maybe you're working on a winter project and would like to share your progress, maybe you're restoring a component on your Pontiac that would be helpful to others as well, or maybe you want to pass along some Pontiac trivia that others ought to know? Whatever it is send it to either myself or Judy, and we'll get it in a future newsletter. While I'm on the subject of the newsletter I need to apologize if you received your emailed version late last month. We had some technical issues with the club email system, but I believe we have that resolved now. If you did not receive your January copy please let myself or Judy know that too.

Valentine's Day is just around the corner, make sure you get your sweetheart something special. I'm getting mine a bottle of ceramic coating, and a new set of tires. Oh, and I might get Michelle a box of chocolates too while I'm out. LOL!!

Until next time, grab another gear and stomp it to the floor!!  
Scott

### NEXT MEETING

**As stated in Scott's Chief's Chatter there will be no meeting in February, because of the COVID regulations.**