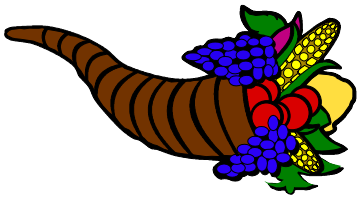

THE HOOD SCOOP

November 2007

GATEWAY

EST. 1984

GTO

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ST. LOUIS, MISSOURI

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The Hood Scoop is published as an informative news bulletin to keep our members up to date on past, present, and future events.

Gateway GTO Association Meetings are held monthly. Dates, times, and locations are listed in the **Upcoming Events** section of the newsletter.

Gateway GTO Association Photo Album
If you have photos of past events or if you take pictures of future events that you think would be good for our Photo Album, please put your name and date and a description of the event on the back and send them to the Photo Album Editor.

Advertising Guidelines
Classified ads up to 50 words are free to members; add 10 cents per word for any ad over 50 words. Payment is due upon submission. (members need to update ads at 3 month intervals or ads will be dropped). Classified ads up to 50 words for non-members are $5.00 per issue. Advertising rates are: full page $25.00, 1/2 page $15.00, 1/4 page $7.00 for three (3) months running time. Payment is due upon submission, discount of 10% for one year pre-paid. Acceptance is at the sole discretion of the editor. All ads should be submitted to the editor by the10th of the month.

Gateway GTO Club Information

The Gateway GTO Association was initially formed in the summer of 1984 by a group of seven. They all had a common interest in the Original Muscle Car, the Pontiac GTO. As a form of communication we publish a monthly newsletter called "The Hood Scoop". The purpose of this newsletter is to keep our members informed of all upcoming activities as well as providing interesting event coverage. The club meets every first Wednesday of the month at Culpeppers Restaurant, St. Charles Mo. 3010, West Clay 636-916-3105

Membership dues are $20.00 per year and all renewals are required to be paid by December 31st. You are allowed to have one associate member.

Club Sponsor

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Hazelwood Mo. 63042 *1-800-892-8267*
www.behlmann.com

As a GatewayGTO member please consider joining the GTO Association of America
The Gateway GTO Association
is an official chapter of the
GTO Association of America
http/www.gtoaa.org

Visit us at www.gatewaygto.com

The **GATEWAYGTO Association** is an affiliated chapter of **THE GTO Association of America (GTOAA)** the Premier National Organization for GTO Enthusiasts. Each month **GTOAA** members receive **The Legend** magazine, a Golden Quill Award winning publication. Members can read the technical articles and have access to the **GTOAA** Technical Advisors Staff. They may use the 50 words of free classified advertising monthly, view the feature articles on some of the most interesting GTOs. They may have access to the **GTOAA** Club Store.

For an on-line preview of **The Legend**, go to www.gtoaa.org.

To become a member of **GTOAA** fill out the application form, or go to www.gtoaa.org and go to Membership App. link.

The **GTOAA National Meet** is hosted by various local chapters and is held annually in various cities across the United States. The acclaimed Concours and Popular Vote Car Shows bring some of the finest GTOs together for superb viewing. Other highlights include many renowned Technical and Special-interest speakers, multi-day swap meet, drag racing, cruises, and other great events.

GTOAA MEMBERSHIP

$30.00 US $33.00 CANADIAN
$35.00 US starting January 2008

www.gtoaa.org/

GTOAA Membership Application Form

Mail completed form to

GTOAA, PO Box 455
Timnath, CO 80547-0455

☐ New ☐ Renewal

PLEASE PRINT LEGIBLY

Name _____

Address _____

City _____

State _____ Zip _____ - _____

Phone (_____) _____

Your GTO Ownership

Year Body Style Engine

_____

_____

_____

Individual Membership Fees

USA	$30
Canada	$33 (US funds)
Overseas	$40 (US funds)

Additional family members (associate membership) $5 each

Please check method of payment

Check Money Order MasterCard Visa

☐ ☐ ☐ ☐

Add $2.00 if paying by credit card

Card # _____

Expiration date _____

InterBank # (MasterCard) _____

Signature _____

Gateway GTO Association

For Sale

66 Tempest Custom 2 door coupe. 326 cubic inch, 2 speed automatic, 76,000 miles, original faded blue exterior and interior. no PS, no PB, no AC, single exhaust car with hubcaps.
Asking $4500 **Call** Seth Sheiter 314-809-4215

Hooker Super Competition Headers for LS2 $100 plus shipping. Removed from 70 GTO because they hung too low.
LS2 Stock Exhaust Manifolds $50.00 plus shipping.
Contact Vic Nettle 314-8923639 vnettle@swbell.net

71 Catalina station wagon, 6 pass, 6 way clamshell tailgate, 400 2 barrel, 400 turbo, AC (not working), PS, PB, Green in and out, stock and American Racing mags. Valve guides say #4 2000 - #3 4000. Runs and Drives. Make offer.
Contact Chris Simmons @ 636-456-3653

Literature:
1964-1972 GTO Restoration Guides
New from club store $15.00
Contact Chris Simmons @ 636-456-3653

Die Cast:
GMP 1:18 Die-Cast GTOs – 1970 Black Judge, 1972 Red GTO, each $89. plus shipping
1970 Triple Black convertible $350. plus shipping.
Contact Harry Smelcer 636-230-6120 or e-mail Harry71GTO@charter.net

Pontiac Trans AM and GTO Parts and Cars
$$ BOUGHT AND SOLD! $$
Always parting out old cars. Have good inventory.
NEED HELP or QUESTIONS
Contact John Novelli 636-925-9916 or 314-495-0332 e-mail gto6472@yahoo.com

Wanted

Lionel Trains, American Flyer Marx. Ho-N-G Gauge, Rail road. Books and memorabilia, Erector sets Tonka Trucks and old toys Pre 70's.
Free appraisals.
Contact John Novelli 636-925-9916 or 314-495-0332 or e-mail gto6472@yahoo.com

1970 GTO Red upholstery or hard plastic interior trim panels. Good/Nice used or better is OK.
Contact John Johnson 573-581-8013 johnjohn@midamerica.net

2005 GTOAA "Gateway Nationals" t-shirts my sons would like a couple of extra Nationals shirts (not the orange worker shirts) S or M & I'd like another in size 2XL
Contact John Johnson 573-581-8013 johnjohn@midamerica.net

Services Available

Tony's Carburetor Rebuilding
Call Tony Bezzole between 9am-1pm @ 314-878-6892

ABC DJ Productions
All types of occasions from weddings to retirement parties. Disc Jockey & Karaoke.
Contact: Mobile Marty Howard @ 636-724-8641

Cee – Jay Auto Body
ASE & I – CAR Certified shop
2123 East 23rd Street
Granite City, Ill
Contact: Cecil Morton @ 618-877-8254

Card Services, Inc.
#13 Hawks Nest Plaza
St. Charles, MO
Contact Craig Glenn @636-946-9892

When you are making out your Christmas card/Hanukah list this year, please include the following:
A Recovering American soldier/airman/sailor/marine
c/o Walter Reed Army Medical Center
6900 Georgia Avenue, NW
Washington, D.C. 20307-5001

Presidents Scoop

We have all returned safely and still friends from our 13 plus day Route 66 Cruise to California. I say still friends as none of the group; the Oxlers, the Melroses, the Mortons, the Mays, Mark Obukowicz and Steve Hedrick had ever spent this much "up close and personal" time together. Yes we all had our moments; even the Tour Director but everyone really enjoyed themselves. We saw some sections of old Route 66 that were paved back in 1926, and it felt like it in the tight suspension of the new GTOs. We came upon a lonely arched bridge (The Rainbow Bridge) off the newer part of Route 66 in Kansas that most people do not travel anymore. This was an excellent photo opportunity and we lined up the 3 new GTOs for a picture.

I am sure you all know what happened next. The Tour Director, me, decided to leave some "Goat Tracks" on the bridge for others to follow. I turned off the traction control and power braked Terrie's Red GTO until the smoke began to pour off the tires. I released the brake and left about 20 feet of "Goat Tracks". Next came Steve Hedrick who wound up his Yellow GTO 6 speed, dumped the clutch and really "lit 'em up" for about 50 feet of "Goat Tracks". Not to be outdone, Mark Melrose power braked his Black GTO and absolutely fried the tires while sitting still then slowly released the brake while still turning 6000 rpm and left about 100 feet of the best "Goat Tracks" you have ever seen. It was a sight to behold as you can see below.

Here are the "Goat Tracks" we left behind for other Goats to follow. Mark Obukowicz rented a car for the trip and ended up with a Hundya. He really wanted to participate and leave some "Hundya Tracks" but the little rice burner would not cooperate.

Several days later, we were in the great state of Texas and where else can you see a bunch of old Cadillacs buried nose first in a farm field. Yes, only in Texas. It is a "tradition" to write something on the cars so others will see it so out came the spray paint and we let everyone know that the Gateway GTO Club was here.

After returning home Mark Melrose has to make an emergency trip to the tire store. He was able to talk his way out of an 89 MPH in a 60 MPH zone in Utah but was not able to talk tread back onto the rear tires. Thanks for the great photo Mark!!!!

GTO meeting minutes Nov 7th 2007
By Vic Nettle

Tom Oxler brought the meeting to order at 7:08. All officers were present for the meeting.

30 persons were in attendance including Tom and Terrie Oxler, Mark and Saundra Melrose, Darrell and Tootie May, Bob Blattel, Mike and Carolyn Bein, Bill Fenlon, Steve Hedrick, Paul Jenkins and Cory Evans, Earl and Barb Lewis, Joe and Bev Mayweather, Vic and Joyce Nettle, Jerry Novac, Brian and Amy O'Sullivan, Buzz and Vicki Simpson, Shauna Wollmershauser, Mark Obukowicz, Marty Howard, Jim Kiburz, Harry Smelczer and John Taylor.

OLD BUSINESS: We voted on lengthening the term of club officers to 2 years. It passed unanimously.

Adopt a Soldier has raised $1015 for Air Force man Daniel Stanfill who will be present at the Christmas party to receive the check for the $1015 plus the $1000 matching money from the Gateway GTO Club **($2015)**

The route 66 cruise to California will be documented on the website by the persons who took the cruise. Joyce will set up a section to be populated by the cruise members.

The Autocross at the GM plant will be run again next year.

The mystery tour had 1 team of 4 cars competing against many Corvettes. Mark said it was a fun event.

The Palisades Charity Car Show had about **70** cars and the day turned out to be quite pleasant. The net proceeds were **$222**.

NEW BUSINESS: there is a wine cruise Saturday 10 Nov (see calendar for details).
The Christmas party will be Dec. 8th. Bring a $25 gift to play "Rob your neighbor". RSVP due by **Nov 18th**.
The January "Pizza Meeting" will again be held at Serra's on McKelvey Rd (watch the newsletter).
Make-a Wish car show will be held at Jefferson Barracks Nov 17th.

Steve Hedrick informed us that a new GTO chapter dedicated to the new style GTOs is forming in Chicago. GTOAA website will start handling renewals and sign-up over the Internet.

Will Bowers is swapping out the 455 engine in his 67 GTO convertible with a properly date coded 400 with high compression 670 heads. He reported on the MECUM auction held in St. Charles Illinois where nice old cars sold for very high prices (hundreds of thousands of dollars).

Earl received Best of Show at the Louisiana car show.

TECHNICAL ISSUES: Current motor oil is less than adequate for old style flat tappet camshafts. New roller cams are at least as good at producing horsepower, so just switch to roller cams. All GM performance engines since the mid 80s have them.

CLUB PERSONAL NEWS: 2 new grandchildren, both girls; one to Tootie and Darrell may, one to Cecil and Annette Morton.
We collected $74 for our excellent waiter, Aaron. Thanks Aaron for all the good service.

The 50/50 netted $26/$26. Joe Mayweather won.

The meeting adjourned about 8:20. We received no speeding tickets on the way home even though I drove quite fast (the hurry to get home because the heater was not working on the 70 GTO---BRRRR). It turned out that the vacuum hose to the heater fluid valve had come off. It was a very easy fix (Joyce fixed it Thursday afternoon). So we shouldn't be cold on the wine cruise Saturday.

2004 Shifter Replacement

by Mike Bien

The main complaint with the ’04 through ’06 GTO is the shifter that GM chose to move the forks on the Tremec T56 six-speed. It was best described in the statement “The detents are mushy and the gates somewhat sloppy…” by Car & Driver (12/03).

Although not as bad as a shifter I once had on an early (‘60) beetle, you really never know where you are unless you start in first and move up in sequence. Speed shifting from second into third sometimes leaves you in a lunge forward after the engine bogs in fifth gear! A real nightmare is cruising on the highway in sixth gear and speed shifting into third. You can’t believe the thrill of sliding off the clutch after shifting into first gear at 65 mph!

I knew of this problem months before I bought the car, but I also knew there was a simple fix to this dilemma. Just like I did on my old “442”, I would replace the factory shifter with a reliable time proven shifter from Hurst.

I patiently waited for almost a year until I finally saw the availability from Hurst for the new GTO’s. Their part number was 530-391-5065 ($269) and it was called the Billet Plus. I ordered it from Jegs in November 2006. It finally arrived on October 4, 2007. Yea, I am a very patient person.

For those of you not following the Hurst saga, they were bought out by Mr. Gasket years ago. Last year, B&M bought out Mr. Gasket and took over the legendary Hurst product line. Apparently, the shifter for the new GTO’s was still in development during the take-over and B&M felt they needed to tweak the design and line up suppliers before releasing the new shifter. You see, B&M, also a legend in the racing circuit, already had a shifter on the market for the new GTO’s that drew many complaints from its buyers and they did not want to repeat that mistake again.

I won’t bore you with the details about installation other then to tell you it takes about 2.5 hours to install by yourself with the proper tools. B&M did a great job on writing the installation procedure that Hurst had not completed.

The results? Fantastic!!!! The very heavy spring detent keeps you in the 1-4 pattern, with no pressure it hangs under third. It takes a deliberate shove to get into fifth gear, but who ever speed shifts into fifth? Some idiots complain about how difficult it is to get into reverse, another gear I don’t often speed shift into. The shift from first to second is very firm with a gate move of only about two inches. When going from second into third, there seems to be a wall you hit to the right and just slam it up. Too many of these and your palm will be bruised. It seems like third gear actually pulls the lever to it! Finally, going from fifth or sixth to third is a piece of cake. Just push up and the lever pops into the neutral position under third and then shove it up into third along the “wall”.

Sadly, I won’t be writing any more articles for the club. Carolyn says this is my last article since this is my last modification!

EPC Car Show October 13th 2007

By Vic Nettle

The day was chilly and rain was falling or threatening all day. Several Gateway GTO Club members were in attendance: Earl Lewis, John and Linda Kehrein and their Son Mike and Ashley, Paul Jenkins and Cory Evans, Shauna Wollmershauser, Joyce and I.

In spite of the unfriendly weather there were well over 200 cars present. There were hamburgers, soda, hot chocolate, pastries, rolls, and lots of stuff to eat. Fifty eight classes covered most types of vehicles.

Afterwards some of us went to the Texas Roadhouse to eat. It was our first time there and the servings were generous and the food tasty. No speeding tickets (unusual for our group) highlighted the day.

Hidden Lake Winery Cruise 10 22, 2007

By Vic Nettle

6 members of the Gateway GTO Club left from our house at 11 AM and took a scenic cruise to Hidden Lake Winery by way of Koch Hospital Road, I-255, I-64, Illinois highway 161, Aviston Rd, Wesclin Rd, and Wellen Rd. The trip took just about an hour including a gas stop for our GTO which was 11 gallons down.

On I-255 our 3 GTOs were passed (slowly) by a group of about 20 Trans Ams, Camaros, and a Corvette. We were itching to run them but stuck to our "no speeding. no tickets" plan (what a terrible plan). Buzz did hit it a bit though.

At Hidden Lake Winery brunch was served in a big dining room that holds maybe 300 persons (only about 50 present though). The array of food was ridiculously large. Some of us only had 1 plateful. Unfortunately the dessert table was an irresistible temptation. Then we bought a bottle of wine and sat in the sun next to the lake. The responsibility of drinking the wine fell onto the shoulders of Cory and of me. We were up to the task.

Unlike the last Wine Cruise, nobody needed an auxiliary driver for the trip home (thanks Mark). We left for home at 3 PM.

Our GTO felt the necessity to run up to 100 mph momentarily just after entering I-64 on the way home (to merge with traffic). And it appeared that Buzz and Paul followed suit. Buzz and Vicki peeled off at Illinois highway 159 and Paul and Cory did the same at I-255 heading north. We went south on I-255 and arrived home at 4PM. Our trip computer indicated that the overall gas mileage was 21.1 mpg. Fantastic day, cruise, and cars.

Brian's and Amy's 4 week-iversary Cruise 2007 Oct. 27

By Vic Nettle

This Cruise was a spur of the moment event commemorating 4 weeks of wedded bliss for Amy and Brian.
We met at the DQ located at highways 370 and 94. We probably should have met at Hardees across the street because everybody got something from Hardees before starting the cruise at 10:15. Four cars were in attendance: Brian and Amy O'Sullivan in their blue GTO, Andrew and Cindy O'Sullivan in their bright red Saturn Sky (neat car), Cory Evans in her Brazen Orange GTO, and Joyce and I in our Spice red GTO.

We proceeded north on 94 and drove all the way to highway 67. It turned out that highway 94 was closed and we had to detour a few miles, which was no big deal at all. It took 2 stoplight cycles to get the 4 cars through the stoplight at highway 67. Then we proceeded north to the Great River Road and left to Pere Marquette Park.

While stopped for a rest room break, Brian's cell phone rang and he was told that the Classic Impala club was assembled at the next pavilion. We drove over there where they fed us 4 different types of chili, brownies, soda, etc. We talked for a while then proceeded up to Hardin where we crossed the Illinois River and drove down to the Golden Eagle ferry at Brussels. The ferry was virtually ready for us as we drove up. Ten minutes later we were back in Missouri and heading towards Chuck-a-Burger.

We ordered double burgers, cheeseburgers, shakes, a root beer float, fries, onion rings, chocolate milk, and a few other items. We were not hungry when we left for home.

Our car put on 158 miles and averaged 20.4 mpg even though we had to run it up to 90 once to keep pace with the group. The weather was pleasant as were the people on the cruise.

Brian missed hitting a deer by half a new GTO car length. It was close. The second deer decided to turn back and thank goodness it did or it would have been in Brian's back seat.

Thanks Brian for the spur of the moment 4 week-iversary cruise

GATEWAY CAR SHOW AT PALISADES YACHT CLUB
By Barb Lewis

It was a cool brisk morning – the sun was shinning – the view was breathe taking as you looked out over the Mississippi and viewed the bluffs with the fall colors of the trees turnings as fast and as far as the eye could see or as fast as the GTO can fly..

It was once said in a movie I've seen many, many times "Build it and they will come" or was it "I had a Dream" I know this was Earl's dream - to make the story short – our club held our first and now never our last charity car show --- It took place at the Palisades Yacht Club on October 28th on a Sunday morning in the town of Portage Des Sioux - Located on Mississippi River about ½ hour North of 370 on 94 - It made for a great Sunday ride and a Great Car Show -

We drew 50 cars that registered plus a few who just came to show off their cars and to check us out-- It was of course some work – but it was fund - Terry and Tom were the King and Queen of registration and Barb was the jester for selling raffle tickets - arm lengths for $10 and all depending on if you were of the male gender you received one arm's length and the female's who enjoy bargains received both arms length -- this brought more females who didn't really care what they won but they were getting a good deal. Barb's thought $10 is better then $5 – and Earl was the Duke of Earl being the host of greeters and visiting with everyone. Then noon approached and Barb was recruited inside the restaurant and it was the last we saw of her outside – She waited tables – cleaned tables - washed dishes – and was nominated by the bartender as their best server --- she has declined the position. Food was great – and next spring I hear Marty is going to plan a Disco night out there for all of us to enjoy RIGHT MARTY???? -

The judges went out and performed their duties well – and came up with the winners and the Mayor chose his favorite - The Mayor mentioned that possibly next year he could arrange a fall festival with our car show - Everyone who attended thought it was great way to end the year..

It was very successful and it was a great way to have a fun raiser and next year -- WATCH OUT --- we'll easily double what we did this year. The net proceeds were $222.

Tangible vs. Intangible
by: Cory Evans

Is it possible to compare a tangible object with one that is not tangible? You can only decide for yourself if the information that is provided will interest you or not. Comparing the GTO to the Camaro, which has yet to be built, is difficult when the specifications on the true version of what the Camaro will have are not yet released. There have been various sources that have released information about the upcoming Chevy Camaro but cannot be verified. The GTO was never given much in the way of advertisement to entice people to buy it from GM. This car really did not gain the notoriety that other common cars have. Those people that are true horsepower junkies and Pontiac enthusiasts had knowledge about the cars comeback. To date only 36,427 GTOs have been sold in the US, this includes the 04', 05', and 06' models. This is a small amount compared the number of Cavaliers, G6s, Tahoes, and others that are sold each year. Chevy can only speculate on the number of Camaro models that will be sold upon the release of the car to the general public. One guarantee that can be given to anyone is that one of each will find its way to my driveway to find out for myself just how closely the cars compare, if at all.

The GTO was delivered to the US via Australia, which is, where they were built and then shipped over seas. People that preordered their cars had to wait up to 6 months for them to arrive back on 04'. The car delivers 350 horsepower for the 04 models, which is powered by an LS1 engine. In 05 and 06 the engine was changed over to an LS2 engine and this produces 400 horsepower stock. Some small body modifications made from year to year but the overall design did not change through all three years of production. If you are unfamiliar with the car, it seems small and cramped on the inside, but they have somehow managed to make the car rather roomy. Someone who is 6 foot 2 and weighs around 250 can get into the back seat and sit comfortably. The GTO has many features that are standard over all 3 model years, including switch button traction control, reduced mass water pump which creates less drag on the engine during operation to help produce more horsepower. Floating piston wrist pins helps to maintain quiet engine operation. High airflow aluminum cylinder heads allow more air in the engine this helps produce horsepower. The car uses low energy ignition coils; these do not take as much energy to start the car. The GTO offered only 2 options. The two options were: choice of a manual transmission or automatic, and the size of the wheel rims, either 17" of 18". Everything else was "take or leave it".

Will the Camaro offer as much as the GTO? Actually the Camaro is rumored to offer a great deal more. The manufacturer plans to compete with a number of cars that are already released and in order for them to do this they need to design a car that will allow most to afford it. The Camaro is said to be offering three different engine options, one that will be a 6-cylinder version, one that will be a V8 version, and the last to be a supercharged V8. There is, however, some discussion on what order the car will be labeled. Since they are not billing it as a retro version, Chevrolet sees no need to label the options that were so popular back in 69'. Many enthusiasts think otherwise. The Camaro is rumored to have a wider stance than the GTO at 79.6" but shorter in length by less than 3" at 186.2" and stand an inch short at 53". These dimensions are all given with the coupe in mind. Information has not been released on the dimensions of the convertible.

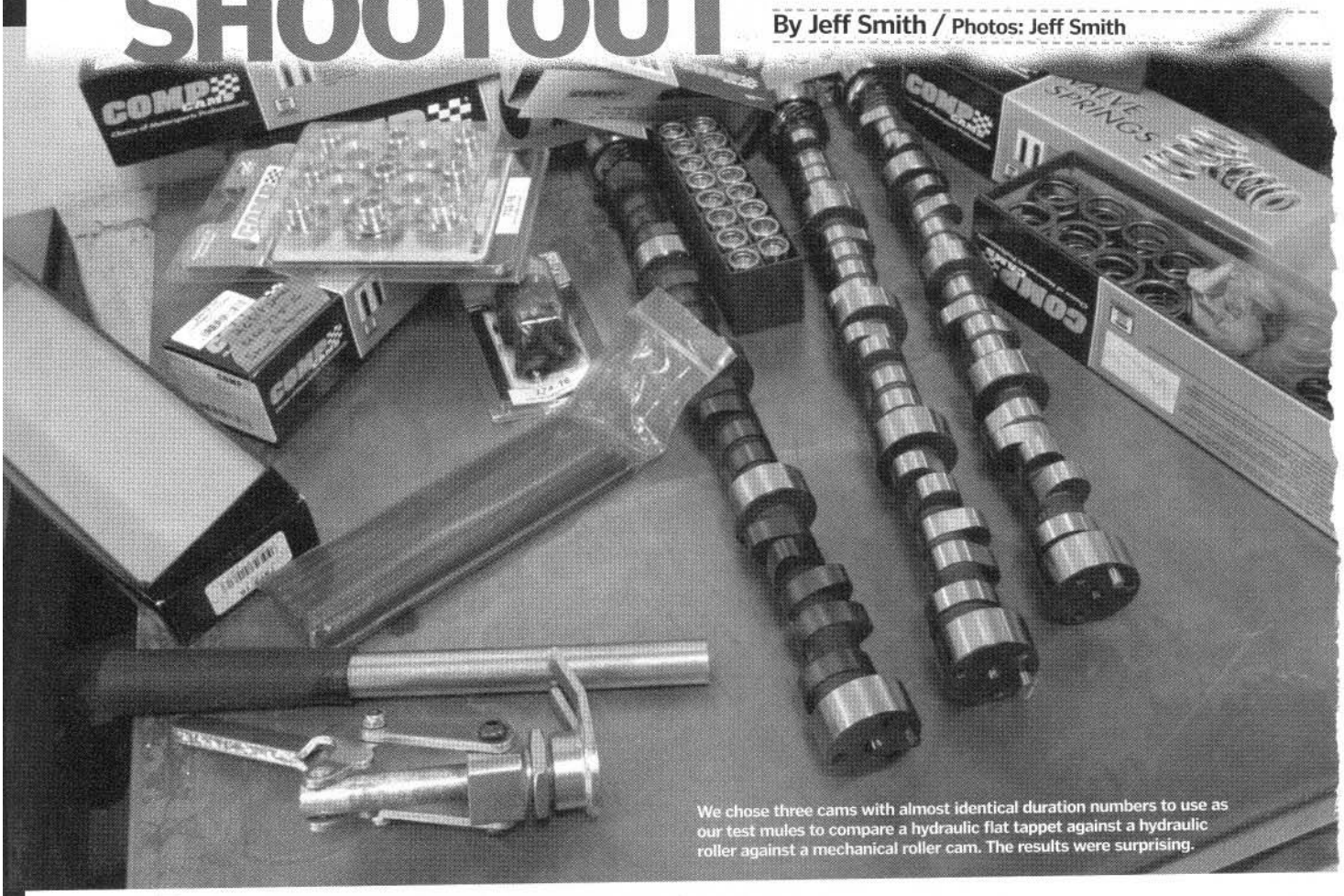
This new Camaro has already had more in the way of advertisement than the GTO ever did. It has been featured in a big major motion picture that allowed viewers to see what the new style will look like if they had not yet seen it. The manufacturer has taken the car to several major car events, such as SEMA, for the media to see it to ensure that the car receives as much hype as they can muster before the scheduled release date in the spring of 09'. The convertible version is to be released less than a year later.

Will the ride or suspension or roominess inside the Camaro compare favorably to that of the GTO? Only time will tell. Will the Camaro sell more versions than the GTO? Of course it will. There are far more Chevy fans out there than there are Pontiacs. Will the Camaro beat the GTO in a head to head race? Maybe it will, maybe it won't. We will have to wait and see.

Are roller cams worth it? Should you just run a flat tappet? We'll show you in our . . .

THREE-WAY CAM LOBE SHOOTOUT

By Jeff Smith / Photos: Jeff Smith



We chose three cams with almost identical duration numbers to use as our test mules to compare a hydraulic flat tappet against a hydraulic roller against a mechanical roller cam. The results were surprising.

Camshafts are one of the most confusing components in an internal combustion engine. What makes those lumpy bumpsticks even more confounding is the sheer number of grinds available, and then multiply that by flat-tappet hydraulic, hydraulic roller, and mechanical roller. With all those choices, how do you go about choosing a cam? While you could use the dartboard approach, in this age of computer simulators there's just no excuse for not arming yourself with the right information. That's what we're going to dive into here. To play out our dartboard analogy, consider that once you've read this story, that ancient finned dart has just become a laser-guided missile that will home right in on your next cam selection.

It seems there is plenty of misinformation when it comes to comparing and contrasting a hydraulic flat-tappet cam with a hydraulic or mechanical roller. All three offer different valve lift potential, yet there should be a way to compare them on a level playing field. We huddled up with Comp Cams' chief cam designer, Billy Godbold, and came up with a camshaft from each of those different follower families that all share a very close kinship with duration at 0.050 inch, so that's what we chose as our common denominator. Now right away, you're going to look at the cam specs box and think we're off our rocker arms because the numbers don't match up. See, that's where it gets complicated. You're gonna have to read all the solid tech stuff to understand what we're doing here. Don't skip over the details or you'll miss something important. And while you're at it, eat your vegetables too.

CAM BASICS

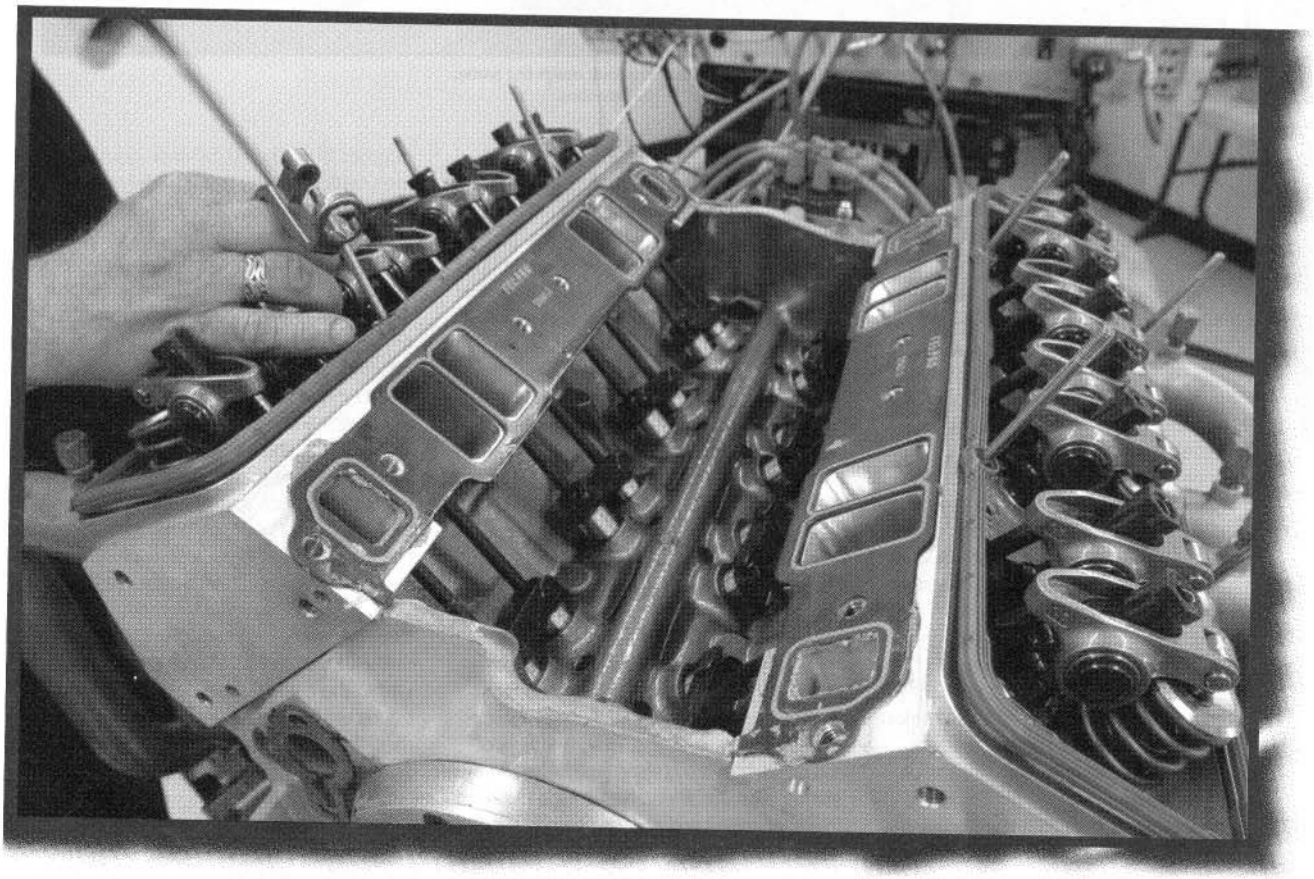
Since there are readers new to this magazine every month, let's quickly roll through some camshaft basics to bring everybody up to speed. There are several ways to evaluate any camshaft, so we'll start with the simplest: lift. A cam lobe is nothing more than an eccentric on a shaft that rotates to create lifter movement. Lift is created when the lobe moves off its base circle, pushing up on the lifter. This lobe lift is multiplied by the rocker ratio to create total valve lift. As an example, with 0.330 inch of lobe lift multiplied by a 1.5:1 rocker ratio, the valve lift would be 0.495 inch.

Perhaps the most informative portion of lobe specs is duration, which is expressed in terms of crankshaft degrees. Duration is also most often delivered in terms of either advertised duration or duration at 0.050 inch of tappet lift. To be totally accurate, any duration spec should be accompanied by the amount of tappet lift where the duration is measured. This rarely happens with advertised duration, but we can tell you that Comp Cams measures both its hydraulic flat-tappet and roller camshafts at 0.006 inch of tappet lift.

Where all this information can get confusing is when we move to mechanical lifter camshafts, either flat-tappet or mechanical roller, and talk about valve lash. Published cam specs are based on the numbers generated by the cam lobes and their effect on the valve. All mechanical lifter camshafts require a clearance between the rocker arm and the valve to account for expansion as the engine warms up. In the case of our XR286R roller cam, the intake lash or clearance is 0.016 inch with the engine hot.

Lash affects most of the published cam specs. The 0.576-inch gross intake valve lift figure on the cam card does not take into account the lash. This means we must use the equation 0.576 – 0.016 = 0.560 inch to come up with our actual net valve lift number. It's a small point, but worth noting for accuracy.

Lash also has an effect on duration. According to Comp Cams, the net change is that 0.001 inch of lash shortens the actual cam duration by 0.5 degree. So with a 0.016-inch lash on the intake, this effectively shortens the intake duration at 0.050 inch checking height by 8 degrees, creating a net duration of 240 degrees at 0.050 inch tappet lift. This explains why we chose a 248 at 0.050 roller cam, because the net duration after lash is actually 240 degrees.

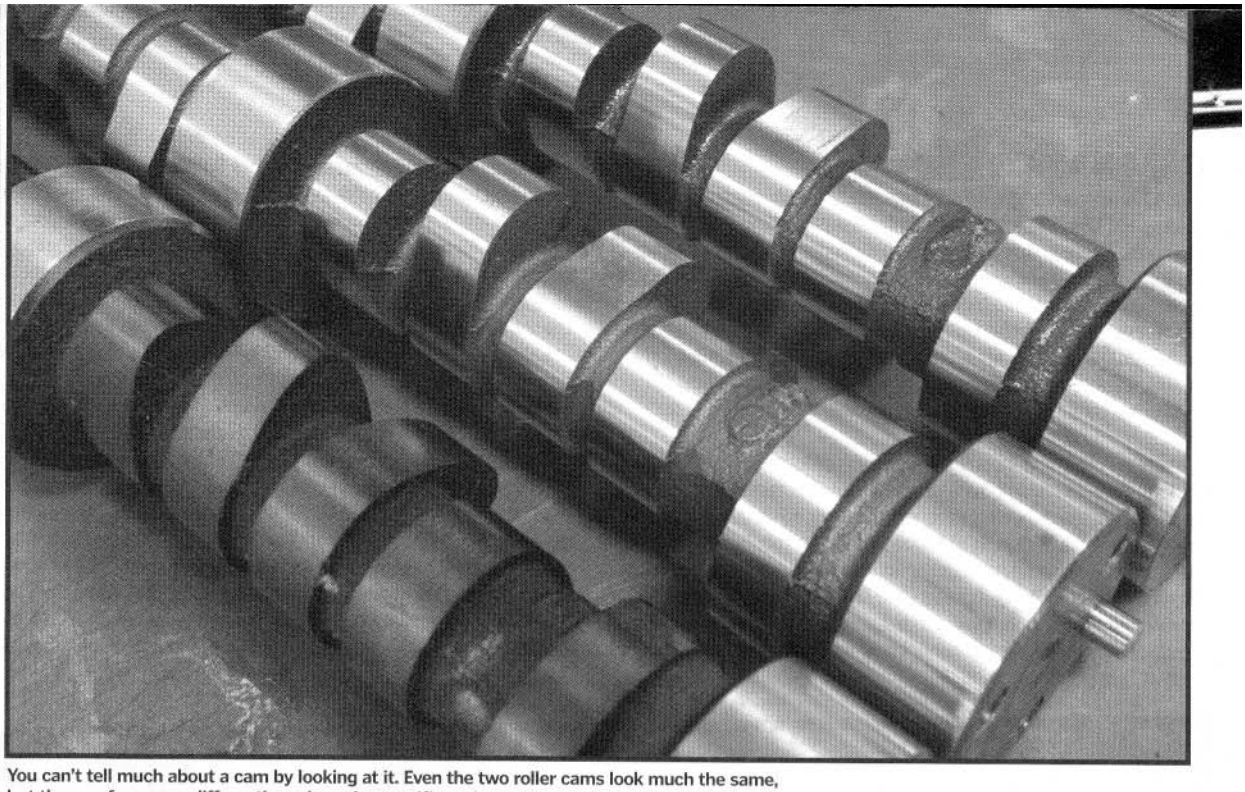


Setting lash on any engine is relatively easy. The best procedure is to warm the engine and then use the exhaust-opening, intake-closing (EO, IC) procedure. With each lifter on the base circle, use a feeler gauge to measure lash at the rocker arm.

CAM SPECS

Cam	Adv. Duration	Duration @ 0.050	Lift	Lobe Separation
XE284 flat hyd., int.	284	240	0.507	110
PN 12-250-3, exh.	296	246	0.510	
XR294HR, hyd. roller, int.	294	242	0.540	110
PN 12-43-8, exh.	300	248	0.562	
XR286R mech. roller, int.	286	248	0.576	110
PN 12-772-8, exh.	292	252	0.582	

Lash: 0.016 int., 0.018 exh.



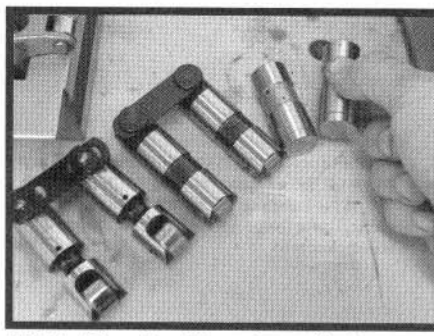
You can't tell much about a cam by looking at it. Even the two roller cams look much the same, but they perform very differently and require specific spring-pressure approaches.

WHY ROLLER CAMS ARE BETTER

This is some serious stuff, so you'll need to get rid of your normal distractions for a few minutes. It is possible to accurately compare a hydraulic flat-tappet cam with a hydraulic roller or even with a mechanical roller cam, but there are some important stepping stones to getting there. To begin with, all cams are rated for duration, based on the lobe profile and expressed in crankshaft degrees. For example, lift is expressed on the cam card in terms of valve lift using the stock rocker ratio. But what we should really be looking at with any style camshaft is the duration of valve opening. According to Comp Cams, the best way to rate a hydraulic lifter cam at the valve is to assume 0.004 inch of lifter piston bleed-down before the lifter begins to move the valve through the rocker arm ratio. In our chart the duration number 283 degrees indicates that the XE flat-tappet cam measures cam lobe duration at 0.006 inch of lifter rise (advertised duration), while the second column indicates that after 0.004 inch of tappet bleed-down and the lobe multiplied by the 1.5:1 rocker ratio, the duration at the valve is actually 282 degrees at 0.006-inch tappet lift.

We can use that same 0.004-inch lifter deflection figure to rate hydraulic roller cams. Notice that despite the fact that the flat-tappet and the hydraulic roller cams are only 2 degrees apart at 0.050 inch of lobe lift (240 versus 242), the hydraulic roller offers 5 more degrees of duration at the valve at 0.200 inch of lobe lift and an impressive 16 more degrees of duration at the valve at 0.400-inch lobe lift (from 107 to 123 degrees). This indicates the higher lifter speed capability of the hydraulic roller design over the hydraulic flat tappet. So while at 0.050 these cams appear the same, this number by itself is deceiving. Looking at a basic lift curve, the hydraulic roller achieves a given lobe lift such as 0.200 inch much more quickly and therefore creates more area under the valve lift curve. This means more air and fuel will enter the cylinder to make more power. Now let's look at the mechanical roller lobe.

Mechanical lifter camshafts are more difficult to evaluate because you should not use advertised duration as an indicator for several reasons. First, because of 0.016 inch of lash (clearance between the rocker arm and the valve), a lobe duration number measured at 0.006-inch tappet lift is meaningless because at a rocker ratio of 1.5:1, that 0.006-inch lobe lift number is worth 0.009 inch of movement at the rocker tip, which is still short of taking up the 0.016 inch of clearance. Even at 0.050 inch of lobe lift (duration at 0.050), this calculated number of 253 degrees of duration does not take into account the lash. Going back to Godbold's rule of thumb, every 0.001 inch of tappet lift is worth roughly half a degree of duration. In order to account for our rated 0.016 inch of lash, we must remove 8 degrees from the 0.050-inch duration figures, which means the 248 degrees at 0.050 is really 240 degrees and therefore exactly the same lobe duration at 0.050-inch tappet lift as the flat-tappet hydraulic camshaft. But notice the tremendous velocity the mechanical roller cam can generate throughout the entire lift curve, offering up a serious 197 degrees at 0.200-inch lobe lift. Compared to the hydraulic roller and flat-tappet cams, you can see why the mechanical roller is superior. At the extreme, the mechanical roller offers a staggering 21 more degrees of duration at 0.400-inch lobe lift than the hydraulic flat-tappet cam, and 5 more degrees than even the hydraulic roller (123 versus 128). What this means is that the intake valve is held open at the same valve lift for a much longer period of time within the cycle from when the valve first opens until it closes. This is why the mechanical roller cam can make more



With the lifters, it's a little easier to tell a flat-tappet hydraulic (right) from the hydraulic roller (middle) and the mechanical roller lifter (left).

power than the hydraulic flat-tappet. Because of additional duration and greater lift, the mechanical roller lifter is traveling faster than its more conservative hydraulic counterparts, which is why lighter components and stiffer valvesprings must be part of the overall package.

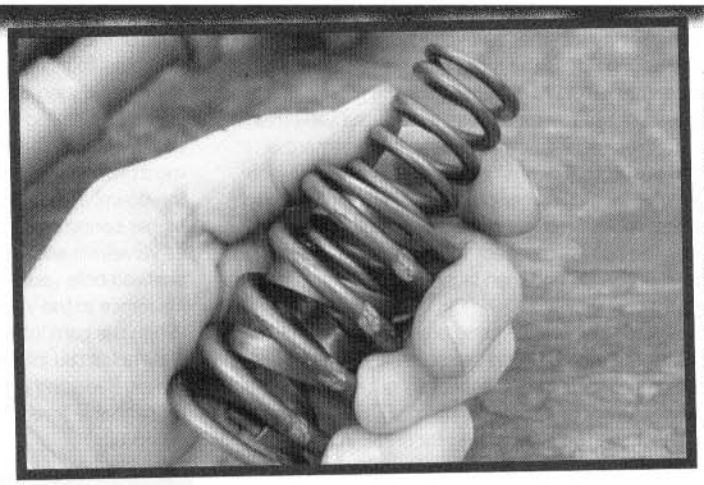
	284XE Hyd. Flat		294XE Hyd. Roller		286XER Mech. Roller	
Lobe Lift	Lobe Dur.	Valve Dur. @ 1.5:1 (w/ 0.004 deflection)	Lobe Dur.	Valve Dur. @ 1.5:1 (w/ 0.004 deflection)	Lobe Dur.	Valve Dur. @ 1.5:1 (0.016 lash)
0.006	283	282	294	292 (+10)	309	285 (+3)
0.015	268	271	276	280 (+9)	285	276 (+5)
0.050	240	250	242	253 (+3)	248	253 (+3)
0.200	153	190	164	195 (+5)	170	197 (+7)
0.400	-	107	-	123 (+16)	-	128 (+21)

The numbers in parentheses for valve duration at 1.5:1 for both the 294XE hydraulic and the 286 XER are the number of degrees of difference compared to the 284XE hydraulic flat-tappet cam.

WHY YOU NEED TO UPGRADE THE VALVESPRINGS

This chart is easy to understand once you know a little bit about valvesprings. Load at installed height refers to the amount of pressure in pounds created by the spring with the valve closed at a given installed height. The installed height is the distance from the bottom of the retainer to the spring seat location on the cylinder head. Load at maximum lift is the pressure created by the spring across the nose of the cam at its greatest valve opening. The spring rate is the amount of load in pounds created for every inch of travel the spring is compressed. If you know the load at both the closed and open points, you can determine the rate. Subtract the installed load from the open load and then multiply by the lift ratio (lift ratio = 1 divided by the max valve lift). Using the 939 spring as an example: 420 – 167 = 253 x 1.85 [1/0.540 lift = 1.85] = 468 pounds per inch (lb/in) spring rate. Coil-bind refers to the height of the spring when it is fully compressed. It's critical that the engine builder allow a minimum of 0.060 inch of clearance to coil-bind. We chose spring pressures higher than Comp's recommendations to ensure that the valvetrain would not go into valve float during testing.

Note the radical increase in seat pressure for the mechanical roller spring application. The hydraulic flat-tappet and roller springs both use a seat load of roughly 160 pounds. But when we get to the mechanical roller springs, the seat pressure jumps to 240 pounds at the same installed height. That's a 50 percent increase in seat pressure and a 59 percent increase in load at max lift. This is necessary in order to fully control the much higher acceleration rate and valve velocities achieved by the mechanical roller lobe working on the valves. As these opening and closing rates increase, they create much larger forces on the valve that must be controlled by the valvesprings.



Valvesprings need to be carefully matched to the specific camshaft in order to obtain maximum advantage from the cam. This is a dual spring with both an inner and outer spring plus a small, flat wire damper that is not counted as a spring.

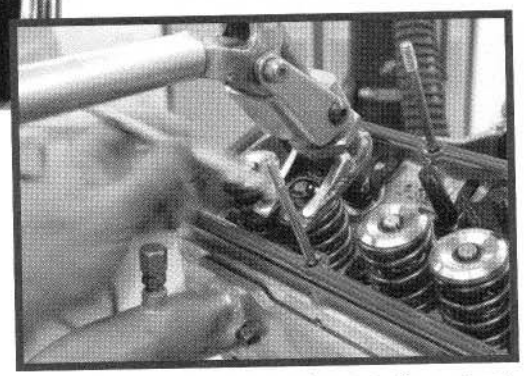
We used titanium retainers on all the springs in this test because of the rather high engine speeds. The lighter retainers make a big difference in how well the spring controls the valve by reducing the weight of the spring/retainer package.

Valvespring	Load @ installed ht. (in.)	Load @ max lift	Rate (lbs./in.)	Coil-bind
Comp PN 928, dual	153 @ 1.900	330 @ 0.500	354	1.160
Comp PN 939, dual	167 @ 1.900	420 @ 0.540	468	1.225
Comp PN 943, dual	240 @ 1.900	557 @ 0.575	551	1.150

THREE SPRINGS FOR THREE CAMS

It would be nice if all the moons and stars aligned in the engine-building world so that one valvespring would work for all applications. Perhaps back in the '20s that was the case, but not now. Because we have three completely different cam designs in a flat-tappet, a hydraulic roller, and a mechanical roller, all three require their own design valvespring. Spring pressure is critical to ensure that the valve is always controlled by the camshaft. Valve float is a common term referring to a loss of control, but for most engines the first sign of trouble is when the intake valve bounces off the seat on the closing portion of the lift curve. This allows cylinder pressure to escape back into the intake manifold, reducing power. Eventually the engine will begin to pop and bang, sounding like an ignition misfire, when in reality it is the valvesprings that have failed. Increasing the spring rate is the most popular solution to this problem, but another fix is to either reduce the rocker arm ratio or reduce the weight of the rocker arm side of the valvetrain, as with titanium retainers. Another excellent investment is thicker-walled pushrods. For small-block Chevys, 0.080-inch-wall-thickness, 5/16-inch-diameter pushrods are very common, but they do cost more. Stronger pushrods tend to deflect less, which reduces the pole-vault effect that can occur at high rpm when the pushrod bends and then launches the lifter over the nose of the cam.

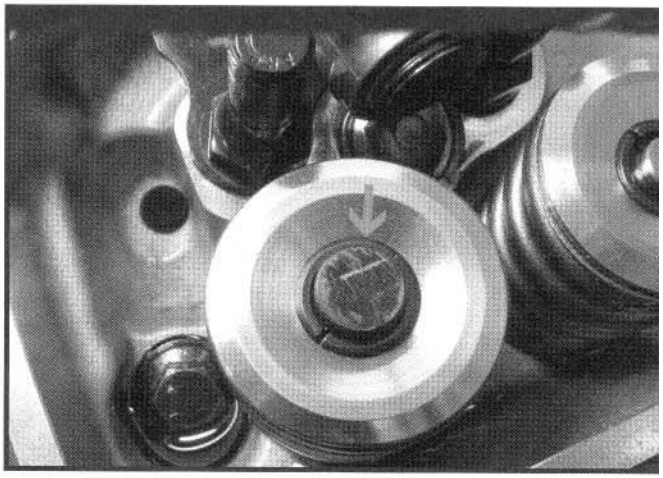
The problem with increasing spring pressure with a flat-tappet camshaft is that too much pressure can literally wipe the lobe right off the cam. This is especially critical during camshaft break-in. For our engine, using the 928 dual springs required us to remove the inner spring for break-in and then install the inner springs after the cam had established its wear pattern. Even then we added extra insurance by using Comp Cams' break-in lubricant, which offers a higher zinc additive package to reduce initial wear on the new cam. When it comes to longer-duration hydraulic, flat-tappet, and hydraulic roller camshafts, the valvespring question becomes a delicate balancing act between maintaining sufficient spring pressure to control the valves at higher engine speeds and avoiding excessive spring pressures that can cause problems.



Each cam required a spring change to allow us to get the most performance out of each camshaft. Westech's Steve Brulé kept the valves in place with compressed air and used a Morôso stud mount valvespring compressor tool to swap the springs.

The beauty of a mechanical roller cam is that it allows the luxury of higher spring pressures, but there are difficulties here as well. Increased spring pressures place higher loads on the valvetrain, causing increased wear, not to mention abuse on those tiny roller bearings in the lifters. One reason for increased spring pressure is the higher engine speed that is part of the equation for a long-duration mechanical roller camshaft. We've included a short spring-pressure chart created with help from Westech's Steve Brulé that we used to help us determine the best springs for each of the three different camshafts. These are numbers that Brulé has found works for him.

An interesting question surfaced during this testing relative to how much spring pressure a hydraulic roller cam combination could withstand. Keeping this explanation short and simple, too much spring pressure does not really force the hydraulic lifter piston down, as is commonly thought. What really happens is that higher spring pressures tend to deflect the pushrod, which causes valvetrain separation at higher engine speeds when the pushrod pole vaults the valve past the nose of the cam. This clearance in the valvetrain allows the lifter piston to pump up. When the cam lobe returns to the base circle, the pumped-up lifter holds the intake valve open and causes the engine to lose power. Reducing hydraulic roller valvespring pressures to more manageable levels reduces pushrod flex and minimizes lifter pump-up.



We also checked pushrod length with each cam change to maintain valvetrain geometry accuracy. Because the Dart heads use 0.200-inch-longer valves to fit stronger springs, this required custom-length pushrods for each camshaft. We set the pushrod length to create this position (arrow) on the valve tip with the lifter on the base circle of the lobe.

SPRING PRESSURE CHART

Lifter Style	Seat Pressure (lbs.)	Open Pressure (lbs.)
Hydraulic flat tappet	150*	350*
Hydraulic roller	200	400
Mechanical roller	220	575

*After cam break-in. It is advisable to remove the inner spring on any dual-spring package when breaking in a new flat-tappet camshaft. This is not necessary with roller cams.

TEST TIME

With all this background tech information jammed into our heads, now it was finally time to put down the theory books and get our hands dirty. The small-block we decided to beat on was the healthy 383ci we used last month for the giant "Speed Parts Tested" cover story. The engine configuration for this test is a little different but includes 10.5:1 compression from a complete Lunati rotator assembly, a set of Dart CNC 227 heads, a Holley Keith Dorton single-plane intake manifold, and a Barry Grant 850 Mighty Demon carburetor. We started the test with the smallest cam, the Comp Xtreme Energy 284 hydraulic flat-tappet version matched up with a dual-spring package, titanium retainer, and the appropriate-length pushrods. The flat-tappet cam made respectable peak power at 507 hp at 6,200 rpm and 489 lb-ft of torque at 5,000. The beauty of a flat tappet is its decent power and great torque, all delivered at an affordable price. But now we were looking forward to ramping up the power numbers with the roller cams.

The hydraulic roller slid right in along with the taller Comp Cams hydraulic roller lifters. The taller lifters also demand shorter pushrods and, of course, a swap to a stronger set of Comp dual springs, which increase the spring load in order to help control the valves. As we expected, the hydraulic roller made more peak power than the flat tappet along with slightly more torque due to its more aggressive roller lobe design. This helps justify its increased cost. The hydraulic roller jumped the power up to 530 at 6,200 rpm while the torque also grew from 489 to 502 at 5,200. That's a solid 13 lb-ft increase of torque and 23 hp. Also note that both hydraulic cams peaked at almost the same rpm for both torque and horsepower. But all this did was motivate us to bolt in the mechanical roller.

By now we were getting good at swapping cams, and the motor had barely cooled down before the new mechanical roller was in place and the springs and pushrods swapped once again. With 0.016-inch lash dialed in on the intake, the duration at the valve was exactly the same as the flat-tappet hydraulic cam, yet this mechanical roller setup rocked when it came to peak horsepower. Once we pulled the throttle handle, however, it quickly became apparent that while the peak horsepower was up over the hydraulic roller, the mechanical and hydraulic roller cam torque curves in the middle were almost identical, something we didn't expect. The mechanical roller's torque peak was actually down 6 lb-ft to 496 at 5,200 compared to the hydraulic roller, but made up the difference at peak horsepower with an impressive 539 at 6,600, which is up 9 hp over the hydraulic roller.

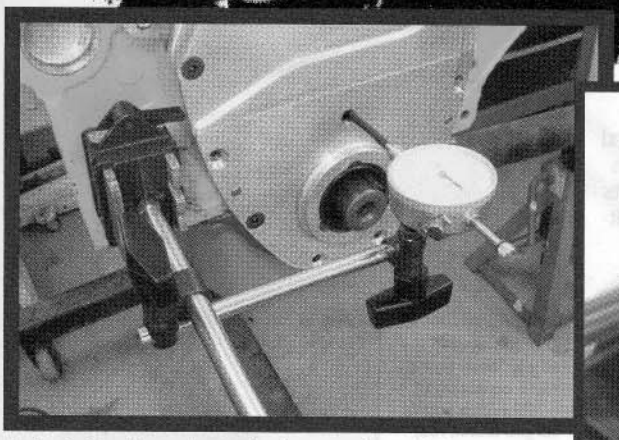
The best way to evaluate this test is to look at the power averages for all three cams. Because all three cams were chosen with the same duration at 0.050, there's not a huge difference in power averages between the three. The mechanical roller clearly owns the peak horsepower title with a stout 32hp advantage over the flat tappet. The mechanical roller also is up 12 hp and 11 lb-ft of torque average, which is a significant difference. But let's not overlook how well the flat-tappet cam performed, especially if we factor in the additional cost of either roller cam package. Of course, there's also the hassle factor of the flat-tappet cam, with both break-in and longevity concerns with current engine lubricants. But the power difference clearly points to the best power-per-dollar choice being with the flat-tappet cam. Looking at all the data, it would have been interesting to see how a flat-tappet mechanical cam would have fared in this test.

If you look at the graph of the three power curves, this may help with the concept of which lifter style cam is the correct one to use. Remember that the easiest way to make normally aspirated horsepower is to make the same torque at a higher engine speed. If you look at the flat-tappet hydraulic horsepower curve, it tends to flatten out at 5,200 rpm, while the two roller cam curves extend peak horsepower well past 6,000. If you plan to only shift your engine at 5,500 rpm or below, there's no reason to spend the extra money for a roller camshaft since all three cam torque curves up through around 5,200 rpm are very similar. The roller cams deliver far more valve control and rpm potential to make more horsepower. Also notice how the hydraulic roller tends to drop off at around 6,200 while the mechanical roller cam continues to make power up through 6,600. We think that this slight dip in the hydraulic roller curve is probably due to pushrod deflection. Since the price difference between a hydraulic roller and a mechanical roller cam is relatively small, there are opportunities for both styles of cam, especially if your plans include a shorter-duration roller cam that is not going to spin as high an rpm as these 240-degrees-at-0.050-duration camshafts.

What this test does illustrate is how critical duration is to the power curve since all three cams, regardless of lifter design, are very close in terms of peak torque. Peak horsepower changed the most between the three cams, but most of that was the change the mechanical roller made by pushing the peak horsepower up to 6,600 rpm. This is also of concern because to take full advantage of a 6,600-rpm peak horsepower point, it's generally required to spin the engine another 400 to 500 rpm past peak power to get the most acceleration advantage out of the engine. This means twisting this small-block to around 7,000 rpm. You'd better have a good steel crank, rods, and strong forged pistons if you're gonna spin a small-block 383 to 7,000 rpm!

Our 383 small-block Chevy test mule consisted of a 383 with a Lunati forged crank, rod, and piston package along with Dart CNC 227 heads, a Holley single-plane intake, and this Barry Grant Mighty Demon 850-cfm carburetor. We used Westech's dyno 1 ¾-inch headers.

With all the attention paid to lower zinc levels in oil these days, we were careful to break in the flat-tappet hydraulic XE 284 cam by first removing the inner of the dual-spring package. This reduces the seat and open pressure, placing less load on the new cam and lifters during break-in only. Then we replaced the inner springs before dyno testing the package.



Before bolting the engine on the dyno, we also took the time to check for roller cam endplay for both the mechanical and hydraulic roller cams to ensure neither cam would move forward and retard the ignition timing. We used this Comp Cams three-piece small-block Chevy timing cover to make the cam swaps easy. It also features an access hole for measuring cam endplay.

We also used a set of Comp Pro Magnum roller rocker arms, not only for their durability, but also because these rockers offer plenty of clearance even for the large 1.550-inch valvesprings.

POWER BY THE NUMBERS

Test 1 consisted of the 383 small-block Chevy with the flat-tappet hydraulic Comp XE284 cam. All other components for this test remained the same for all three tests.

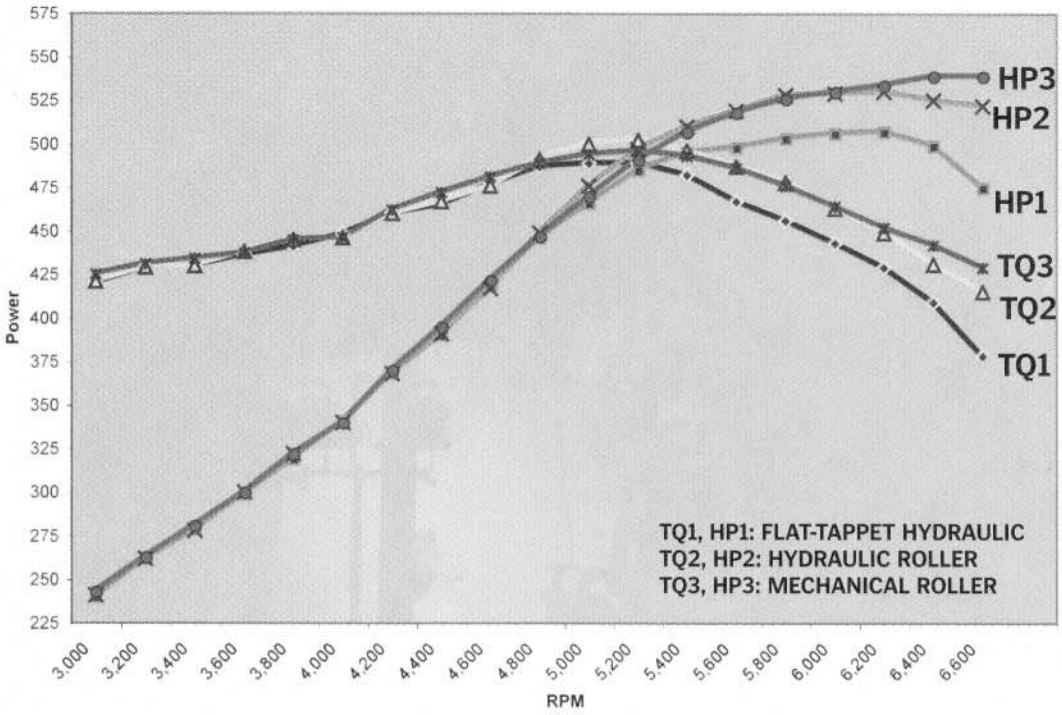
Test 2 changed to the XEHR294 hydraulic roller cam and dual valvesprings.

Test 3 swapped to the XR286 mechanical roller cam and to a third, higher-load set of dual valvesprings with titanium retainers.

The DIFF column represents the difference in power between Test 1 and Test 3.

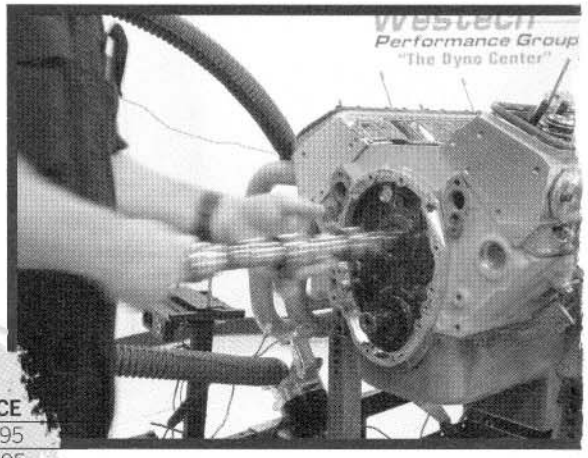
	TEST 1		TEST 2		TEST 3		DIFF	
RPM	TQ	HP	TQ	HP	TQ	HP	TQ	HP
3,000	420	240	421	241	425	243	+5	+3
3,200	429	262	429	262	431	263	+2	+1
3,400	430	279	430	278	434	281	+4	+2
3,600	436	299	438	300	437	300	+1	+1
3,800	441	319	445	322	445	322	+4	+3
4,000	448	341	446	340	446	340	-2	-1
4,200	460	368	460	368	462	370	+2	+2
4,400	465	390	467	391	472	395	+7	+5
4,600	477	418	476	417	481	422	+4	+4
4,800	487	446	491	449	489	447	+2	+1
5,000	**489**	466	500	476	494	470	+5	+4
5,200	489	485	**502**	497	**496**	491	+7	+6
5,400	482	495	496	510	493	507	+11	+12
5,600	467	498	487	519	486	518	+19	+20
5,800	456	503	478	528	476	526	+20	+23
6,000	443	506	463	529	464	530	+21	+24
6,200	429	**507**	449	**530**	452	534	+23	+27
6,400	409	499	431	525	442	539	+33	+40
6,600	378	475	415	522	429	**539**	+51	+64
Avg.	450.7	412	460.7	423	461.7	424	+11	+12
Peak	489	507	502	530	496	539	+7	+32

Note: The average columns take into account power numbers every 100 rpm, which are not listed in this chart.



POWER CURVES

Note how all three camshafts create almost identical power curves through 5,000 rpm. By 5,200 rpm, you can see the hydraulic flat-tappet cam begin to nose over while both rollers continue to make similar power up to 6,000, where the mechanical roller takes over to make the most peak horsepower.



Swapping cams is easy with a three-piece timing chain cover. All we had to do was yank the intake and water pump, pull the harmonic balancer, pull all the pushrods and lifters, slide the cam out, and reverse the process. The roller cams did not require a serious break-in procedure, so that made the process even quicker. END

PARTS LIST

COMPONENT	PN	SOURCE	PRICE
Comp XE 284 hyd. flat	12-250-3	Summit Racing	115.95
Comp XR 294HR hyd. roller	12-443-8	Summit Racing	255.95
Comp XR286R mech. roller	12-772-8	Summit Racing	255.95
Comp hydraulic lifters	858-16	Summit Racing	92.95
Comp hydraulic roller lifters	885-16	Summit Racing	509.95
Comp mechanical roller lifters	888-16	Summit Racing	516.99
Comp rocker, Pro Magnum 1.5:1	1104-16	Summit Racing	430.69
Comp springs, dual for flat hyd.	928	Summit Racing	139.95
Comp retainer, for 928, titanium	732-16	Summit Racing	299.95
Comp 10-degree keepers	611-16	Summit Racing	22.88
Comp dual spring, mech. roller	943-16	Summit Racing	299.95
Comp retainer, dual spring, titan	731-16	Summit Racing	299.95
Comp springs, dual hyd. roller	939-16	Summit Racing	137.39
Comp retainer, titanium for dual	732-16	Summit Racing	299.95
Comp pushrods, hydraulic roller	7949-16	Summit Racing	145.95
Comp pushrods, std. length	7992-16	Summit Racing	168.69
Comp pushrods, hyd. flat, + 0.100	7993-16	Summit Racing	125.95
Comp pushrods, mech. roller	7995-16	Summit Racing	135.95
Comp timing set	3100KT	Summit Racing	176.69
Comp roller button	211	Summit Racing	22.39
Comp 3-pc. timing cover	210	Summit Racing	229.95
Comp shim package	4757	Summit Racing	25.69
Moroso stud mount spring tool	62370	Summit Racing	79.95

→SOURCES

Comp Cams; Memphis, TN; 901/795-2400; compcams.com
JMS Racing Engines; El Monte, CA; 626/579-4567; jmsracing.com
Moroso Performance Products; Guilford, CT; 800/544-8894; moroso.com
Westech Performance Group; Mira Loma, CA; 951/685-4767; westechperformance.com

Schedule of Events 2007

NOVEMBER:

7th **GTO MEETING** Culpeppers St Charles 7pm **(CLUB SPONSORED point value 20 - 40)**

17th **1st MAKE-A-WISH STORIES of LIGHT** Jefferson Barracks Park 9:00 a.m. to 3:00 p.m. Show: $5 to enter
(Registration time for show is 11 a.m. to 1 p.m.) Awards 2:00
http://www.gatewaygto.com/pdfs/2007_SOL_car-bike_show_flyer.pdf

DECEMBER:

8th **HOLIDAY PARTY** WEBSTER GROVES BARN (Hawkins House), 1155 South Rock Hill Road, Webster Groves, MO

The Gateway GTO Holiday Party

When: December 8, 2007
Where: Webster Groves Barn History Center
1155 S Roch Hill Road Webster Groves MO 63119
Time: 7pm – Midnight
Cost: $10.00 per person

Bring a gift ($25.00) for "Rob Your Neighbor"

RSVP

By: November 18

Fill out RSVP card, (enclosed) with check in envelope provided

BYOB

(bring your own beverage)

Thank You

http://gatewaygto.com donation of 40 coats

St. Louis – Help Keep Our Neighbors Warm

WARNERS' WARM-UP VII

Teaming up to keep the Bi-State warm every winter

October 7 - 21 • 2007

The seventh annual Warners' Warm-up Coat Drive will take place from October 7 – 21. Bi-State residents are once again encouraged to donate new and gently-used coats at participating police stations, FedEx Kinko's, Custom Cuts, and credit unions. Operation Food Search will get the coats into the hands of those who need them most. Special thanks to Amrazek Moving Systems, Scarefest, Bounce U and U-Haul for supporting the drive. Funds to purchase new coats are also greatly appreciated. Call 877-FIRST-13 to learn more about hosting a drive at your business, school, or organization.

http://kurtwarner.org

Boyer Family = app $350 in Can Food/ Personal Care Drive and $1,330

Karen, Daniel, Moe
Brittany, Brandon,
And Bryson

Karen

Official Gateway GTO Officers Ballot Form
For 2007-2008
This is the official ballot form that must be filled out and mailed to Will Bowers

Only this form will be accepted

Nominations

President: Tom Oxler _____

Vice Pres Mo : Mark Melrose _____

Vice Pres Il.: Darrell May _____

Secretary: Vic Nettle _____

Treasurer: Will Bowers _____

Chapter Rep.: Steve Hedrick _____

Only one vote per member please.

Must be returned by December 7th
Officers will be announced at Holiday Party

Mail To:
Will Bowers
#1 Goshen Woods
Edwardsville, IL 62025

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