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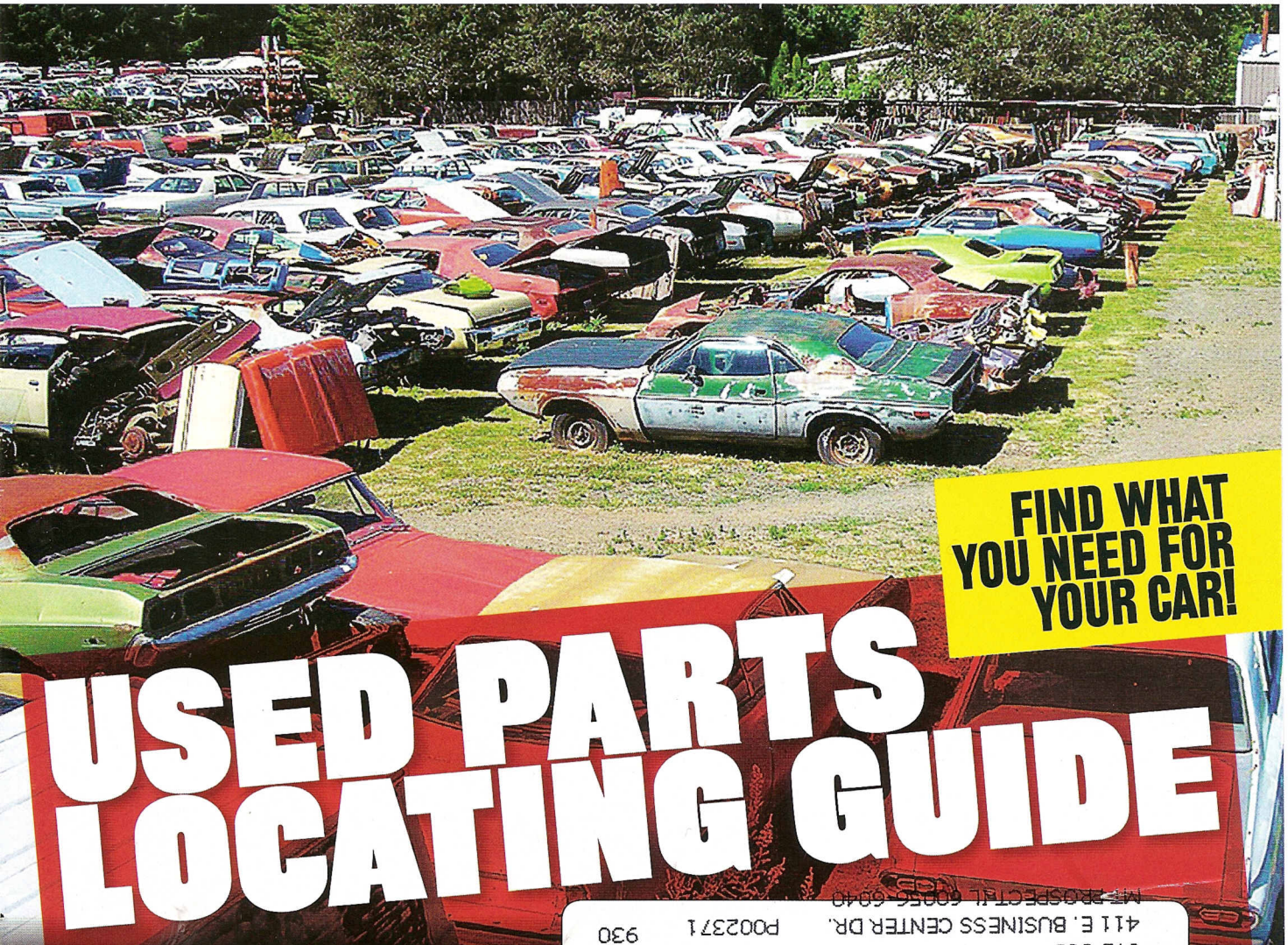
MOPARMUSCLEMAGAZINE.COM FEBRUARY 2011



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- **SUPERCHARGED 318** WE BUILT IT—NOW WE TEST IT
- **2010 AMSOIL/*MOPAR MUSCLE* ENGINE CHALLENGE** THE RESULTS OF OUR DYNO SESSION
- **LATE-MODEL TECH** BUMPSTEER REPAIR

FEBRUARY 2011

Schurbon Engine and Machine is the winner of the 2010 AMSOIL/ *Mopar Muscle* Engine Challenge, making more than 510 horsepower from a 340-inch small-block using Rockett Brand 93 octane gasoline.

THE 2010 AMSOIL/*MOPAR MUSCLE* ENGINE CHALLENGE

SCHURBON ENGINE AND MACHINE WINS OUR 2010 DYNO CONTEST

TEXT: DAVE YOUNG
PHOTOS: DAVE YOUNG AND RANDY BOLIG

If you love the Mopar small-block, then this year's AMSOIL/*Mopar Muscle* Engine Challenge is right up your alley since Chrysler's LA V-8 is the featured engine. The rules for the 2010 contest required all of the builders to utilize the new RHS/Indy cast iron "X" cylinder head, and all of the engines were run on Rockett Brand 93 octane gasoline, but pretty much anything else was fair game. Of course, our rules do keep the engine builders from using too many exotic or one-off parts like aluminum or titanium connecting rods, ceramic lifters, or undersize piston rings, but that's just to keep these engines similar to what our readers have in their cars. We also eliminated the upper rpm limit this year, and there was no maximum displacement rule.

Like each year of our contest, the engine builders were selected after submitting an application that can be downloaded from our website, and then had from February 15 until the opening day of the Mopar Nationals to complete their engines. Of course most contestants chose to complete them a little early for some pre-contest dyno testing, which is certainly allowed within the contest rules. After their display during the Mopar Nationals, we delivered the engines to Comp Cams' Memphis, Tennessee, research facility to be tested on Comp's Superflow engine dynamometer.

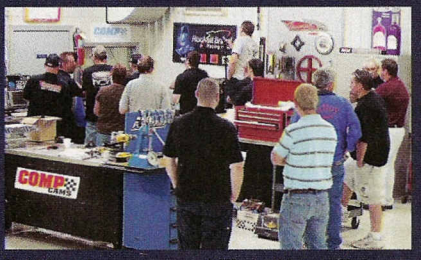
Six engines made the deadline for this year's contest, ranging from the overbored 273 of Chenoweth Speed and Machine, to the 408 stroker brought by Mid America Racing Engines. At Comp, the engines were run in random order and had to make a minimum of three qualifying pulls in one 45-minute period, then three judged pulls in a second, scored 45-minute period. Engine builders are allowed to tune and modify their engines during this time, so long as their changes are within the rules and performed within the timed periods of the contest. Scoring this year was easy, as each engine would be judged by one of the oldest standards: horsepower per cubic inch.

At Comp, last year's winner Schurbon Engine and Machine drew the Monday morning dyno session, hoping to set the bar high with their 340 cubic inch small-block. Engine builder Scott Schurbon and his team then surprised everyone by quickly making their three qualifying pulls, then performing a camshaft change right in the dyno cell. Risking disqualification if they didn't achieve their goal, Scott and his crew finished the cam change and had the engine fired up in plenty of time to make the required pulls and accomplish a little tuning.

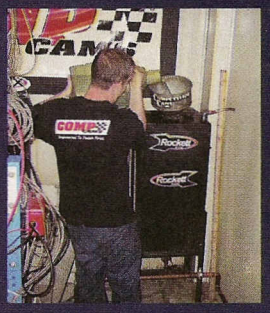
Scoring a best pull of 511.3 horsepower from a 340-inch motor, or 1.504 hp/ci, the Schurbon entry not only impressed everyone as a solid performer, but held on among tough competition to win the 2010 Challenge. This month we'll show you the highlights of our trip to Comp, and the details of each dyno session in the order the shops finished. Be sure to watch future issues of *Mopar Muscle* Magazine, where we'll go inside these engines and show you the parts and techniques each builder used to gain an advantage, and check out www.moparmusclemagazine.com to see video of these engines on the dyno.

If you attend the Mopar Nationals, be sure to check out our display and speak with the engine builders. Remember that advice is free, and this advice comes from some of the best Mopar engine builders in the country.

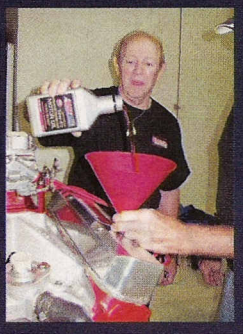
Comp Cams spends countless hours engineering and testing their products to ensure great performance, and graciously hosts our contest each year. We'd like to thank dyno operator Rich Smith and the entire Comp team for their hospitality.



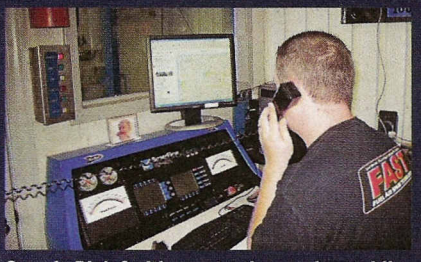
Nothing draws a crowd like a Mopar V-8 on an engine dyno, and all eyes were on last year's winner Schurbon Engine and Machine as they attempted to back up their victory in 2010.



Rockett Brand provided the 93 octane specially blended unleaded gasoline for the contest, and with compression ratios as high as 12.6:1, these engine builders really tested the product. Rockett Brand Engineer Tim Wusz was on hand as well to answer any fuel related questions.

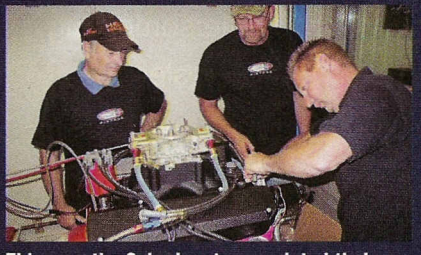


While on the dyno, all of the engines use AMSOIL 10W40 synthetic motor oil. Over the years, we've come to appreciate the quality of AMSOIL's lubricants, finding them to be well engineered for maximum protection. The engine builders in our contest seem to feel the same way as many of them are AMSOIL dealers.

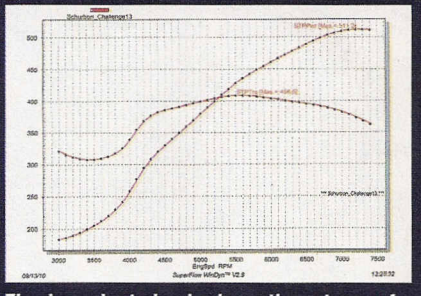


Comp's Rich Smith was testing engines while nervously watching his cell phone last year, waiting for his wife to have their first child. This year his daughter Alexa is almost one, and Rich used the phone mainly to give directions to the MRL team.

Schurbon Engine and Machine captured the win for the second year in a row, making more than 511 horsepower from their 340 cubic inch small-block for a factor of 1.504 horsepower per cubic inch.



This year the Schurbon team painted their small-block Panther Pink, showing their true Mopar colors. The little 340 fired up immediately on Comp's dyno, and after a brief warm-up, Scott chose to make his three qualifying pulls back to back, leaving the rest of the session for a planned camshaft swap.



The dyno chart clearly shows the potency of this Mopar 340. At more than 1.5 horsepower per cubic inch, this well-engineered piece earned Schurbon Engine and Machine first place honors for the second year in a row.

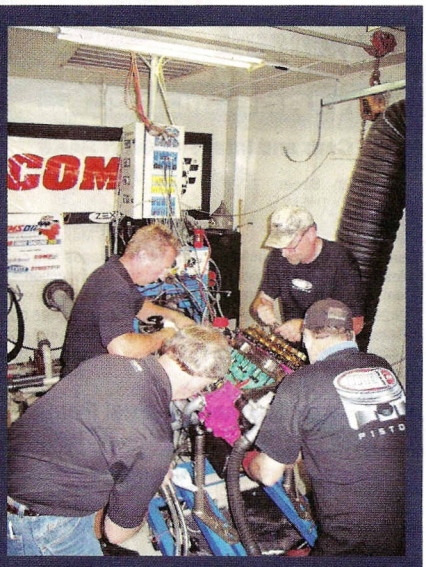
FIRST PLACE

SCHURBON ENGINE AND MACHINE
MAQUOKETA, IOWA

Engine builder Scott Schurbon has become very adept at studying the rules of our Engine Challenge, putting together winning combinations in back-to-back contests. Last year, Schurbon Engine and Machine won the Challenge by building the most economical engine in the contest, and this year they achieved the win by tweaking the most horsepower per cubic inch from their somewhat unconventional short-stroke 340 cubic inch engine.

On the dyno at Comp, the Schurbon entry sounded crisp as it warmed up for the required dyno pulls. After making three quick pulls to qualify, Scott and his crew Larry Griffith and Bob Siegwarth decided to use the rest of their 45-minute qualifying period, and a portion of their 45-minute judged period, to attempt a camshaft change and intake swap on the dyno. Having already made a stout 523 horsepower during qualifying, this was a risky move since failure would mean the team wouldn't make their required judged pulls, resulting in disqualification.

Fortunately, the team operated like clockwork, even getting a little help from Comp engineer Chris Padgitt, and accomplished the swap to an even larger Comp roller camshaft and Indy Mod-man intake with plenty of time to spare. Unfortunately, the cam and intake swap resulted in a loss of power, some of which was tuned back into the motor by swapping back to



Most in attendance thought the Schurbon team was crazy for attempting a cam and intake swap during the contest. The team worked efficiently, however, re-firing the engine some 30 minutes after they began the cam change.

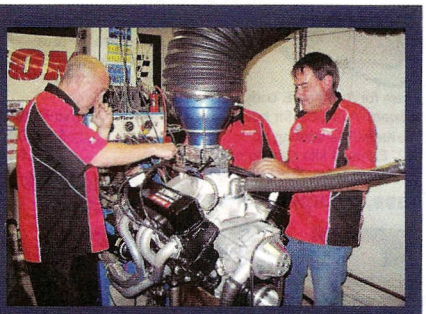
the Indy single-plane intake. Even though it didn't result in improved power, we certainly give Schurbon Engine and Machine credit for having the guts to attempt the swap during their short dyno session.

Eventually tuning their engine to a best judged pull of 511.3 horsepower for a factor of 1.504 horsepower per cubic inch, the Schurbon team knew this would be a close contest and had hoped to set the bar a little higher. They'd have to sweat it out until the rest of the engines were dyno'd, but their impressive score held up to win the 2010 AMSOIL/*Mopar Muscle* Engine Challenge. We congratulate Schurbon Engine and Machine on their second consecutive contest win and look forward to seeing them in next year's competition and at the PRI show in Orlando where they'll receive their award.

SECOND PLACE
PROMAX PERFORMANCE INDIANAPOLIS, INDIANA

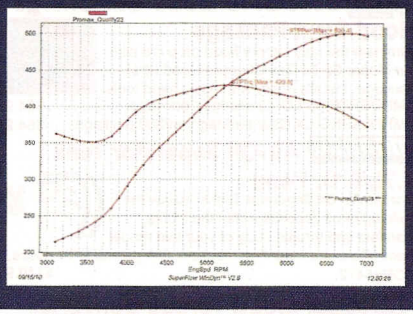
Having participated in previous years of the Engine Challenge, engine builder Ben Gorman of Promax Performance has brought a series of stout Mopar engines to our contest. This year was no different as the Promax 340 made more than 500 horsepower on its best pull, landing a solid second place win with 1.452 horsepower per cubic inch.

On Comp's dyno, the Promax team made a series of timing and jet changes during their 45-minute qualifying dyno session, netting horsepower numbers in the high 490s. During their 10-minute cool-down session prior to their judged pulls, they made a spark plug change to hotter plugs and then increased ignition timing to net a best pull of 500.4 horsepower. At more than 1.45 horsepower per cubic inch, this is a powerful 340, earning a solid second place in the 2010 Engine Challenge.



Promax Performance made a strong showing this year, as their over-bored 340 made over 500 horsepower to capture second place in the 2010 Engine Challenge.

The Promax entry sounded crisp right from the start, pushing the limits of our Rockett Brand 93 octane gasoline with 12.4:1 compression. As the last engine to run during the 2010 contest, everyone was watching to see if Promax could pull off the win.

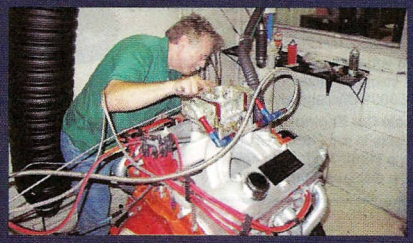


The top two engines in this year's contest were each close to 340 cubic inches, and each utilized a Comp solid roller camshaft. More than 500 horsepower on pump gas shows that this is a potent combination. We congratulate Promax Performance on their second place finish.

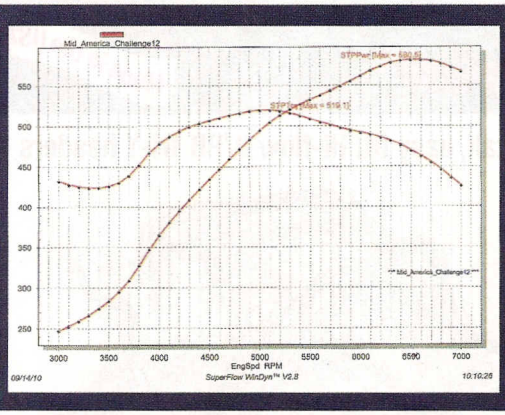
THIRD PLACE
MID AMERICA RACING ENGINES WASHINGTON, IOWA

As a previous winner of our annual contest, engine builder David Bruns of Mid America Racing Engines knows what it takes to make a Mopar engine run. This year he brought the largest displacement small-block to the challenge, knowing he'd need big power numbers to have a chance at a win. Using the required RHS/Indy cast-iron cylinder heads, treated to a full port job, the Mid America small-block

Bringing the largest displacement small-block to the contest at 408 cubic inches, Mid America Racing Engines made the most power of the contest at over 580 horsepower to score a third place finish.



When the Mid America entry fired up it sounded more like a big-block than a small-block. David Bruns efficiently tuned his 408-inch LA motor to big-block power numbers as well, earning third place in our competition.

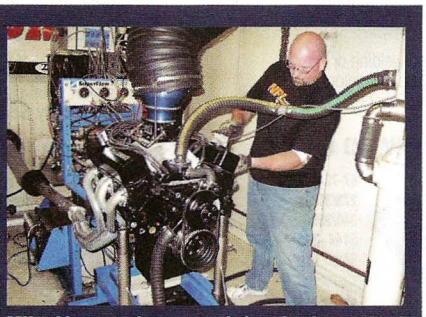


We knew we had some great engine builders in this year's competition, but Mid America blew them all away in terms of raw power. Netting 580.5 horsepower for a factor of 1.422 horsepower per cubic inch, this is one powerful small-block Mopar.

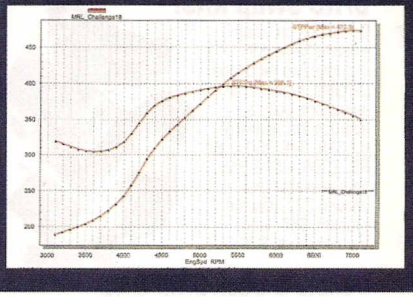
made a best pull of 580.5 horsepower for a factor of 1.422 horsepower per cubic inch, for a very close third place finish.

When the Mid America Racing Engines small-block fired up, it was obvious this was the biggest engine in the contest as it rumbled in the dyno cell. During his qualifying pulls, David Bruns effectively tuned his engine to the conditions at Comp, gaining more power with each pull. Tuning by making ignition timing and jet changes, David Bruns really showed that these cylinder heads will flow, even on a large displacement engine.

The 340 Mopar was a popular choice this year, and engine builder Mike Liston of MRL Performance brought a powerful one to the 2010 contest. With a flat-tappet camshaft, this little powerhouse made more than 470 horsepower.



Mike Liston only removed the air cleaner and adjusted the ignition timing while in the dyno cell, completing all of his pulls in far less than the allotted time. This engine had a few trick parts but was basically bolted together with well-selected off-the-shelf items.

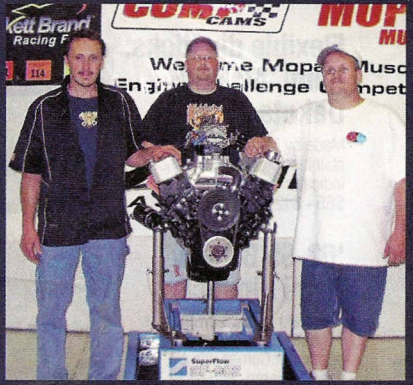


The MRL Performance entry kept making power to above 7,000 rpm and had nearly 400 lb-ft of torque as well. We congratulate Mike Liston on his fourth place finish.

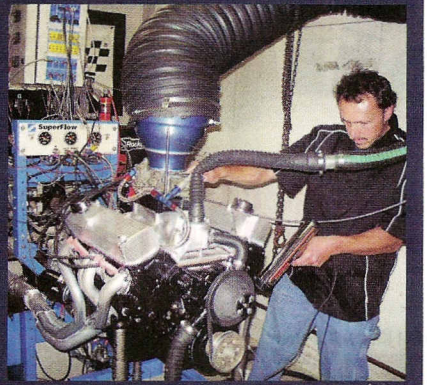
FOURTH PLACE
MRL PERFORMANCE JACKSON, MICHIGAN

MRL Performance made a good showing this year, as their RHS-headed small-block turned in impressive numbers with unported heads, moderate compression, and a flat-tappet camshaft. Stating that the head flow of these heads out of the box was nicely matched to his Lunati Voodoo camshaft, engine builder Mike Liston proved it by making 1.372 horsepower per cubic inch from his overbored 340 small-block.

On the dyno the MRL Performance entry started easily and ran well, making well over 450 horsepower on its qualifying pulls. For the judged portion of the contest, Mike changed his spark plugs to E-3 plugs, but otherwise left his tuning alone. By adding a little ignition timing and removing the air cleaner during the judged pulls, Mike achieved a best scored pull of 472.9 horsepower.



As a newcomer to the AMSOIL/*Mopar Muscle* Engine Challenge, B&G Speed and Machine built a flat-tappet 360 for the contest. At more than 418 horsepower, their small-block Mopar made 1.14 horsepower per cubic inch.



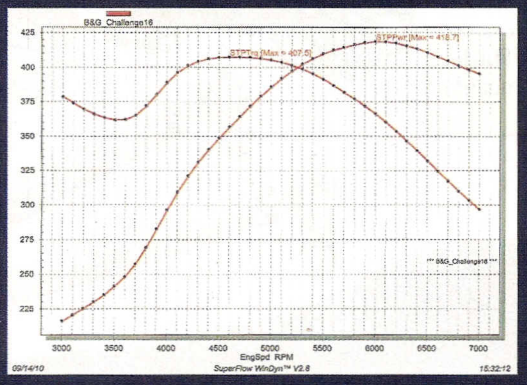
The B&G team worked well together, quickly warming their engine up and making the required qualifying pulls to 7,000 rpm. With ignition and timing changes, the B&G entry made more power with each dyno pull.

FIFTH PLACE
B&G SPEED AND MACHINE BARGERSVILLE, INDIANA

B&G Speed and Machine built a solid 360 cubic inch Mopar small-block for our 2010 dyno contest, running their engine on the last day of the Engine Challenge. Though a couple of minor issues may have kept us from seeing the real potential of this engine, the team from B&G were professional and efficient, tuning their relatively mild 360 to well over 400 horsepower. These guys definitely made a good showing in our 2010 contest, and we look forward to seeing them in future Engine Challenges.

DO YOU HAVE WHAT IT TAKES

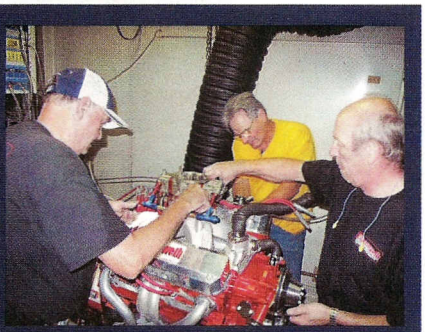
to compete in the AMSOIL/*Mopar Muscle* Engine Challenge? Remember, we accept applications from shops large and small, and even from guys building engines in their garages, so don't hesitate to apply. Everybody is a winner in our contest, and getting your company's name in front of our readers can certainly get your phones ringing. We'll announce the rules for the 2011 contest at the PRI show in Orlando, Florida, or a copy of the rules and application can be downloaded from www.moparmusclemagazine.com.



FIFTH PLACE CONT'D

B&G's best pull of 418.7 horsepower was enough for a fifth place finish in the 2010 AMSOIL/*Mopar Muscle* Engine Challenge. We congratulate the B&G team on their performance and thank them for entering our contest.

Last year Chenoweth Speed and Machine finished second in our contest. Unfortunately, a mechanical issue kept the Chenoweth team from making the qualifying dyno pulls in this year's competition.



The Chenoweth/LaRoy team came ready for action, but unfortunately it was quickly apparent that their engine was pumping water into a header. Having the least displacement, this engine would have needed to make 420 horsepower to beat Schurbon Engine and Machine.

SIXTH PLACE
CHENOWETH SPEED AND MACHINE MORTON, ILLINOIS

Chenoweth Speed and Machine built the smallest engine for this year's contest, over-boring a 273 Chrysler for a total displacement of 279 cubic inches. Noting that last year the LaRoys made an impressive 1.6 horsepower per cubic inch, Chenoweth teamed up with LaRoy Engines for the 2010 contest, hoping to gain an advantage. Everyone was eager to see what kind of numbers this little powerhouse would make, but unfortunately the number seven cylinder was filling with coolant during warm-up on the dyno and the engine had to be shut down. As of this writing, we aren't sure what happened, but we'll update you when we go inside these small-blocks in future issues. *MM*

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STREETpro by Cometic Gasket

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Rockett Brand

COMP CAMS

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