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TIPS & TRICKS TO CIVILIZE YOUR BEAST

By Scotty Lachenauer

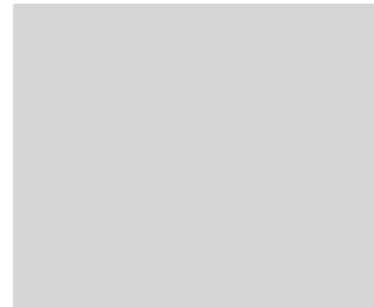
Muscle Car Review, September 16, 2013

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Whether you love Ford, GM, or Mopar, you gotta appreciate the Hemi. It is a pure piece of American ingenuity whose design has withstood the tests of time—measured not only from short burst of quarter-mile passes but also running hours on end at 200-plus-mph speeds on big oval tracks. Those familiar with this beast know the Hemi is an animal that can be quite ornery at times. The quest to tame the Elephant brings us to the mean streets of the Bronx, New York. Longtime [car](#) enthusiast Alan Lindenberg has been tweaking cars since his childhood. The son of a mechanic and machinist, Al learned the trade as a bodyman and mechanic. He has since had a 43-year career in both private and government fleet maintenance and repair.

His Hemi



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Hemis Ain't For Wimps!

A few years back, Al got a hankerin' for a new ride, and not just any ride, a Hemi. He decided to piece together his [new car](#), searching for a suitable B-Body chassis while hunting down a period-correct 426 powerplant. He found a badly beaten 1969 Road Runner for sale, a shell of an ex-drag car. Al then heard of a Hemi for sale locally—a street Hemi out of a 1968 GTX. Original and complete, it had been well cared for even though it hadn't seen action in 35 years.

Al's Hemi buildup started with a pretty clean long-block. The motor looked like it had been apart once before, but it only needed honing and a cleanup to get back into rebuilding condition. No overbore was needed, which Al states is a great stepping stone to building a bulletproof Hemi.

The original cylinder heads were rebuilt to stock spec with new valve guides. The crank was cleaned and polished. Clevite bearings were added all around. The OE dual carb intake topped off the long-block, and a set of aftermarket headers was installed.

The carburetors were a big problem from the start. The original Carters were damaged from bad gas sitting in them over the years and were soon ditched. Al opted for a pair of Edelbrock 600s, as he wanted to start fresh with a carb he knew well.

The Elephant was then ready to go into the restored Road Runner chassis, but Al started having issues right away: rough idling, overheating, power loss, and just an overall bad demeanor. He needed to figure out how to make this Elephant walk the line without detuning. If you're not bridled by originality, these steps could help you tame your Elephant.

Camshaft

Al did some research and found that, by 1970, Chrysler had replaced the Hemi's solid-lifter cam with a hydraulic cam, which helped driveability. Al contacted Crane Cams and found the perfect setup in the Crane catalog: cam, lifters, and springs in a matched set. Interestingly, even though the cam was in the catalog, it was not a stock piece, and the bumpstick had to be custom ground.

The stock '68 solid-lifter cam spec'd out with 0.484/0.475 intake/exhaust lift and 284 degrees of duration. The '70 hydraulic cam shared the same specs. The Crane cam Al chose had 0.528/0.535 lift and 304/314 duration. It's not a very big cam, just enough to squeeze some more power out of the motor. Crane promised reliability, power, and streetability with this grind, and so far it has delivered in spades.

Cylinder Heads

Al did what many guys do when running unleaded fuel: He put in hardened valve seats, but only on the exhaust side, where it was needed. He also replaced all the valve guides and installed Mopar Performance parts, including stainless steel valves with a five-angle valve job. These were the only modifications done to the heads. The intake is the original stock piece. No modifications done or needed.



Al's dual Spal fan setup is digitally controlled. The interior engine bay puller fan comes



It never hurts to have a little bit more coolant flowing throughout your Hemi, so this aft



Al's dual Spal fan setup is digitally controlled. The interior engine bay puller fan comes

Cooling

Many things can cause a Hemi to heat up: poor timing, not enough coolant flow, bad gas. Al started with a few basics to get his Hemi running cooler. First he added a high-volume Milodon water pump to keep the coolant flowing consistently. Next, the radiator he had originally installed was replaced with a Griffin two-core model. The cores are oversized and are, believe it or not, more efficient than most four-core radiators.

This setup is finished off with a pair of Spal fans, a pusher and a puller. The fans work in conjunction, moving air through the radiator quite efficiently. So far, Al hasn't had an issue, even during traffic spells on the Cross Bronx with temperatures hovering around the 90-degree mark.

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Fuel Delivery

Al can't stress enough how bad gas is today. The ethanol content can easily destroy [fuel](#) system parts. After his first fuel pump and carbs were damaged, he went to a completely different fuel delivery system.

Al decided to use both an electric and mechanical fuel pump. A high-volume Edelbrock mechanical pump gets a push from an electrical Edelbrock pump out back. This helps stop any vaporlock on warm days. His system is set at 6.5 psi at 120 gph. A 3/4 line from the electrical to the mechanical pump is split to a pair of 5/16 lines to the carbs (which is stock).

Al runs a fuel return line back to the tank to keep it from collapsing under pull. He also has a vapor separator inline, an important add-on. Most Hemis are very, very hungry, Al says. Keeping these detuned race engines fed with octane is important to keeping them happy.



To push much-needed octane up to the mechanical pump from the tank, Al installed an Edelbr

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The two Edelbrock 600s work in unison to get the big Hemi the octane nourishment it needs. They are stacked single file on the original-issue intake. Check out the linkage—complex to the eye, but well thought out and executed.

“ Al Can’t Stress Enough How Bad Gas Is Today ”

Carburetors

A Hemi’s carbs can make all the difference to reliability. Al searched out an expert and contacted Marty Kaufman, owner of Dynamic Carburetor in Mount Vernon, New York, to settle his engine’s fuel delivery problems.

The new Edelbrocks Al had installed had issues of their own—the secondary carb had a broken accelerator pump. Kaufman tore them down, exchanged broken parts, replaced the metering rods with larger ones, and then changed out the jets: 0.98 in the primaries and 0.95 in the secondaries. Lighter springs were also used so less vacuum is needed to bring on more fuel. Kaufman says these engines have to run rich to run right.

Next, the linkages were altered from the stock progressive setup to running them synched up, which helps deliver the air/fuel mixture properly and keeps the big Hemi running smoother. It also helps bring on massive amounts of torque a lot earlier in the power curve.



The Painless wiring system might be an eyesore to purists, but it does the job, “harnessin



Hiding behind the air cleaner and mounted inconspicuously on the firewall is the Rev-n-nat



The Painless wiring system might be an eyesore to purists, but it does the job, “harnessin

Electrical

Al ditched his original points system for an electronic ignition when he first built the engine, and he hasn’t gone back, as the Mopar system has worked well with his setup. He also tossed the original wiring harnesses and rewired the B-Body with a Painless kit. This not only removes any chance of running the Hemi on worn, damaged wiring but also gives him the option of easily adding accessories should he want creature comforts.

Last but not least, Al incorporated an R/T Garage Rev-n-nator ignition module, a bolt-on, stock-appearing control module with a built-in rev limiter. He set it up with a 6,000-rpm limit, ensuring that he would never redline his prized Hemi.

Exhaust

If Al could do it all over again, he would ditch the TTI headers he put on the [car](#) a few years back. They’re big and bulky, hard to work around, and give off a ton of heat. These headers start as 2½-inch primaries flowing into 3½-inch collectors. All of that leads into a 3-inch Flowmaster system—probably better suited for a race car than his cruiser. Al feels as long as your system is free flowing and large enough to get rid of the spent gases, there should not be an issue with running any good exhaust system, including the OE parts. Al thinks maybe someday the original cast iron manifolds will find their way back on the car.

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Final Tune and Thoughts

Hemis were born and bred during the leaded, high-octane '60s, and they just don't run well with the low-octane ethanol mix offered today. For a while, Al was mixing race gas with pump premium. This made his Hemi run better than it ever did, but it wasn't cheap, to say the least. He now uses a gas stabilizer to help avoid premature gas breakdown.

As for final tuning, Al says these engines cannot be tuned properly by conventional means. "A timing light is useless," he says. "A vacuum gauge is the correct way to get these engines tuned accurately."

He uses the gauge to determine when the most vacuum is produced. At this point the engine is being starved of octane, and pre-detonation would cause some pinging. By backing off the advance, you find that area where the pinging has ceased, without totally backing off on the vacuum. It's the engine's sweet spot.

Hopefully, these tips can help you get your Elephant to behave. For those who don't mind improving on what Ma Mopar created, they could be a lifesaver . . . or at least a tow saver!

Says Al, "Hemis ain't for wimps!"



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