

# BUILDING AN UNBLO



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Okay, so your mind is made up. Drag boat racing is your thing and jet boats rule.....a perfect combination. And why not go racing where there's some real hard core competition, say like the unblown fuel jet class and the 8.00 second bracket at National Jet Boat Association events. Might as well just jump in with both feet....right?

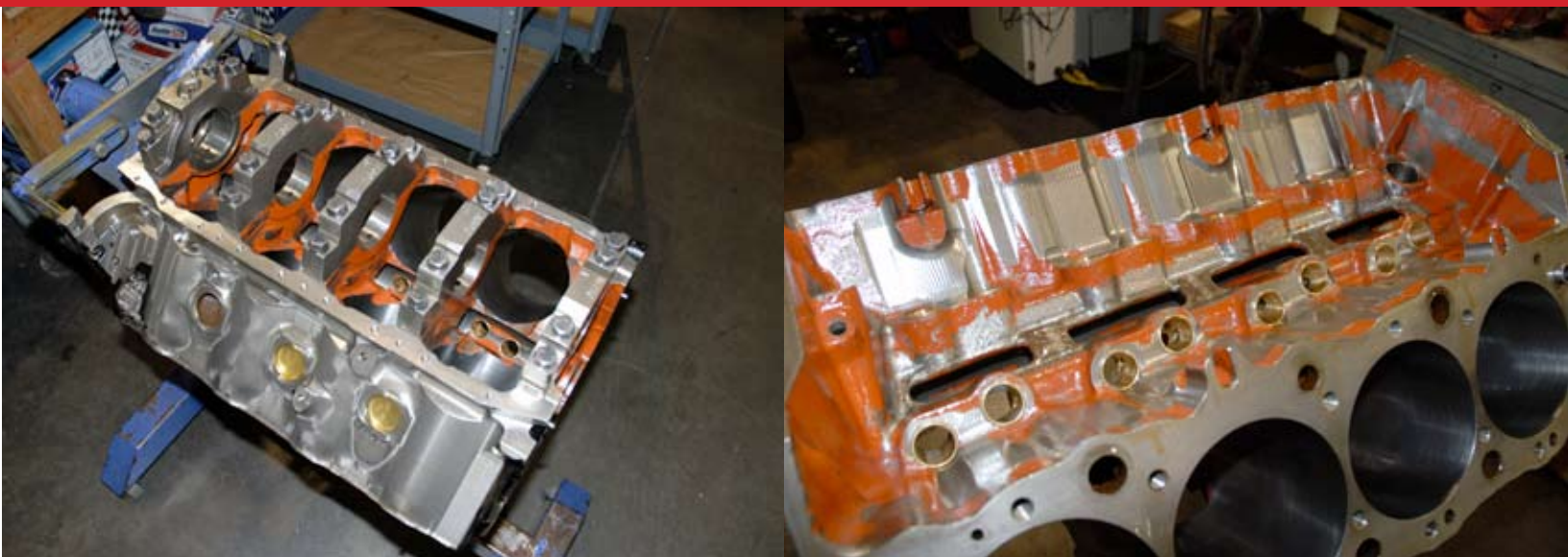
For jet boat enthusiast, Jordan Woods, that's kind of the thought process as he begins his quest for recognition and records in a couple of the toughest NJBA categories around. And if you're going to go hunting bear, you better make sure you're armed with the proper equipment.

As the new boat build began to come together, Jordan hooked up with Paul Pfaff Racing Enterprises in Hunting-

ton Beach, California to supply his new Placecraft hull with the power it needed to be competitive. For those familiar with high performance engines and boat racing, the Paul Pfaff moniker has been the muscle responsible for countless winning campaigns and successful record setting quests for boats of all sizes and shapes for more than forty years. In fact, I was buying offshore race motors from Pfaff (back when it was Pfaff and Sowins in Harbor City, CA) as early as 1969 when Paul was still a proud member of the Los Angeles City Fire Department.

Today, although larger with more employees and machinery than back in the 1970s, the Pfaff shop remains much the same. Lots of careful oversight to every motor project, big or small, and a keen knack for making large

# OWN FUEL MONSTER



quantities of horsepower and torque with a remarkable level of reliability, the kind of perfect storm every racer wants. Working along side Paul is his step-son, Gordy Jennings Jr., an APBA Hall of Champions inboard circle boat driver, and a quick study when it came to picking up the tricks of the performance motor building trade.

"The downturn in the economy as had an effect on our business, just like everyone else in the in the boating industry," comments Gordy. "It's been quite awhile since we've been involved in a serious drag boat engine project and when Jordan approached us, it seemed like a good opportunity to expand into that market again. Hopefully he'll be successful in racing when he finishes the boat later this year and perhaps that will generate some additional customers for us along the way."

In order to be competitive in the unblown fuel jet and the 8.00 second bracket, Jordan and Gordy targeted the horsepower bar at no less than 1000. "That's about where the other guys in the class seem to be," said Jordan. "Naturally I don't want to give anybody an advantage in the power department. Hopefully when we get the new engine dialed-in we'll have a little edge."

The foundation for the project is a Dart block with a 4.250" stroke Lunati crank. The math works out to be 565 cubic inches of displacement with a set of CP Pistons. The steel billet connecting rods are from Oliver, rotating around Calico coated bearings. Lubrication is provided by a custom oversized oil pan from Williams Manufacturing.

Although you might think that coming up with innovative ways to conserve on weight wouldn't be that big and issue with a thousand available horsepower between the stringers, it is. So much so that Pfaff turned his in-house CNC machine shop loose on the Dart block for nearly a week, milling away over thirty pounds of excess material off the block before it was assembled.

Maybe the coolest aspect about this engine build is the incorporation of Edelbrock's new 18 degree (valve angle) Big Victor cylinder heads that were collaborated on by New Jersey drag racer/engine guru, Pat Musi. Musi is known for his skill in building and tuning big inch motors with nitrous. Musi also has been an outspoken critic in the past about a void in the marketplace of a specially designed high performance heads for drag





racing/nitrous applications. A couple of years ago, Vic Edelbrock Jr. and Musi decided to team-up and take care of that problem once and for all, designing, engineering and manufacturing a totally new cylinder head. Earlier this year, the 18 degree Big Victor made its debut on asphalt strips around the country, and now it's going to try its magic on the liquid quarter mile as well. Essentially the new head has redesigned combustion chambers that greatly reduce the inherent insufficiencies and design restrictions of older style heads using nitrous oxide systems.

The rest of the valve train componentry consists of a set of Pac racing valves from Manley, Isky Red Zone lifters and custom roller rockers from T&D Machine Products. The camshaft is a solid lifter/mechanical roller stick from Bullett with an incredibly steep .918" lift on the intake side. Pfaff's machine shop was busy here too as the cam tunnel was bored out and oversized 55mm roller cam bearings installed. Push rods come from Manton.

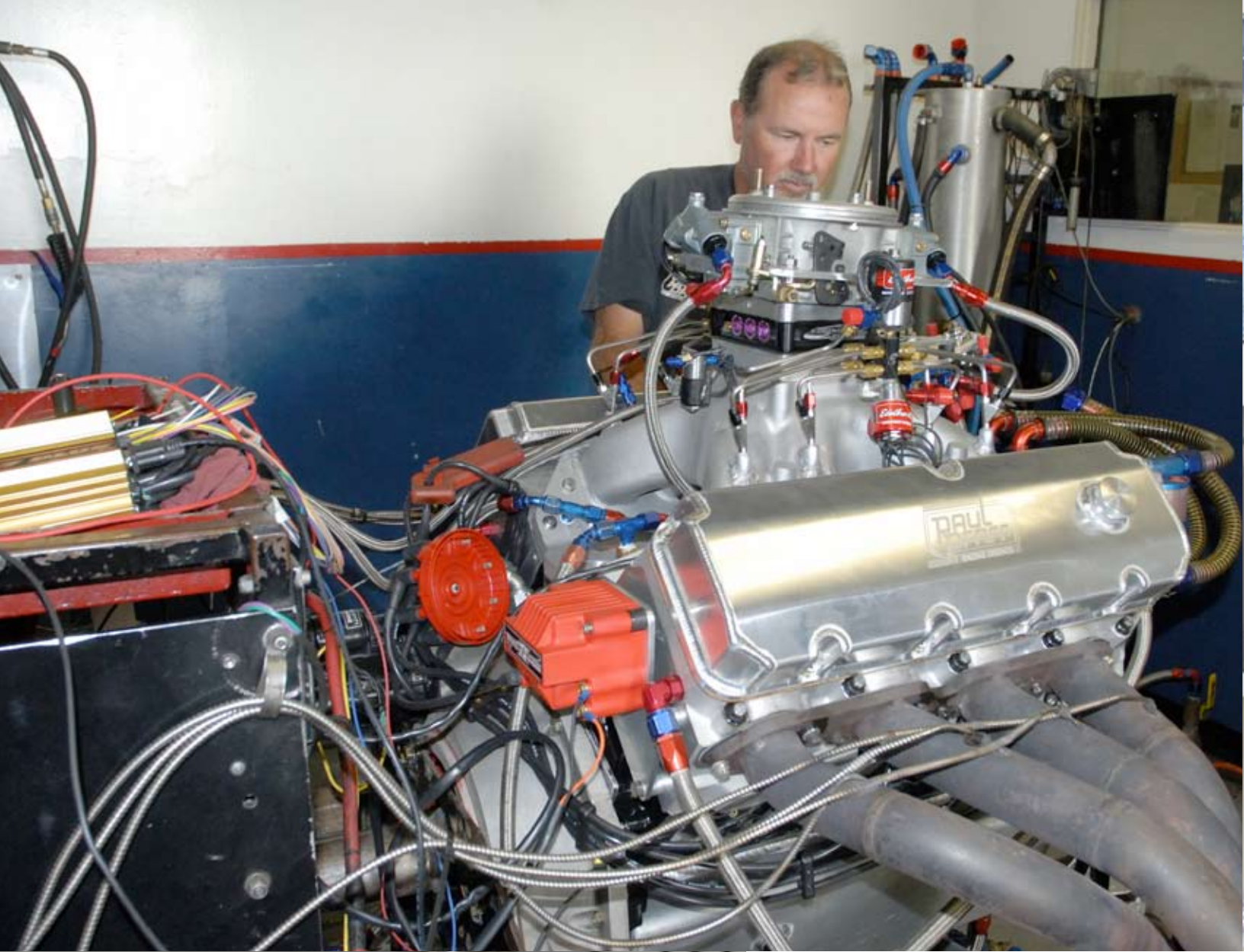
Up on top, the project motor runs a single 1350 cfm

Holley carburetor sitting on an Edelbrock intake manifold. Because the engine has a 14.5:1 compression ratio, it demands a strict diet of C16 VP racing fuel. Don't plan any lengthy trips, however, because C16 goes for about \$80.00 for a five-gallon can. And then again, don't forget that there's also an Edelbrock nitrous system present to deliver that extra little kick when you need it.

Electronically, the fire to the spark plugs comes from an MSD ignition system and the brains of the monster are manipulated and monitored by Edelbrock's very sophisticated Data Acquisition System.

Always nerve wracking is the initial dyno test for any new engine. Before the runs, a decision was made to advance the cam timing on the motor just ever-so-slightly (2 to 3 degrees) in order to lower the torque curve so it more realistically matches up with the demands/impeller size of the jet pump. Day-one dyno pulls consistently resulted in 1,065 to 1,070 horsepower readings in the low 7,000 rpm range. Maximum torque was 820 ft./lbs. at 6,100. Not a bad start.





"I think we could have hit an 1,100 horsepower pull if we had decided to continue with the tuning process," said Gordy who was at the control panel in the dyno room during each pull. "We did get one run of 1,077 HP at 7700 rpm but that's a little out of the rpm comfort zone for the pump. If we can stay just on the plus side of 7,000 rpm and make close to 1,100 HP, we'll be just fine."

Naturally, Jordan is anxious to get the new engine into the boat and begin the water testing phase. He'll be looking for speeds in the low to mid 130s and cutting as close to an 8.00 second blast as humanly and mechanically possible. Hopefully all the pieces will come together by mid-September of this year when NJBA goes racing at Lake Elsinore in Riverside County. Once he gets it wet, look for part 2 of this story to unfold.

