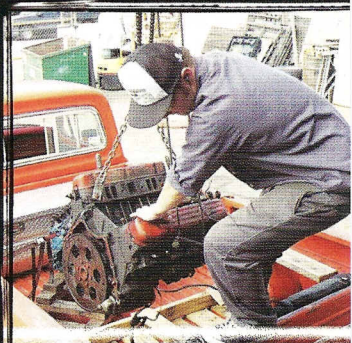


EXTRA! WE DIVE INTO WATERBORNE PAINT PG. 56



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**TOKEN  
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PG. 12

→ This cover shreds.

**WHEELS-UP ACTION!** PG. 16



JULY 2009

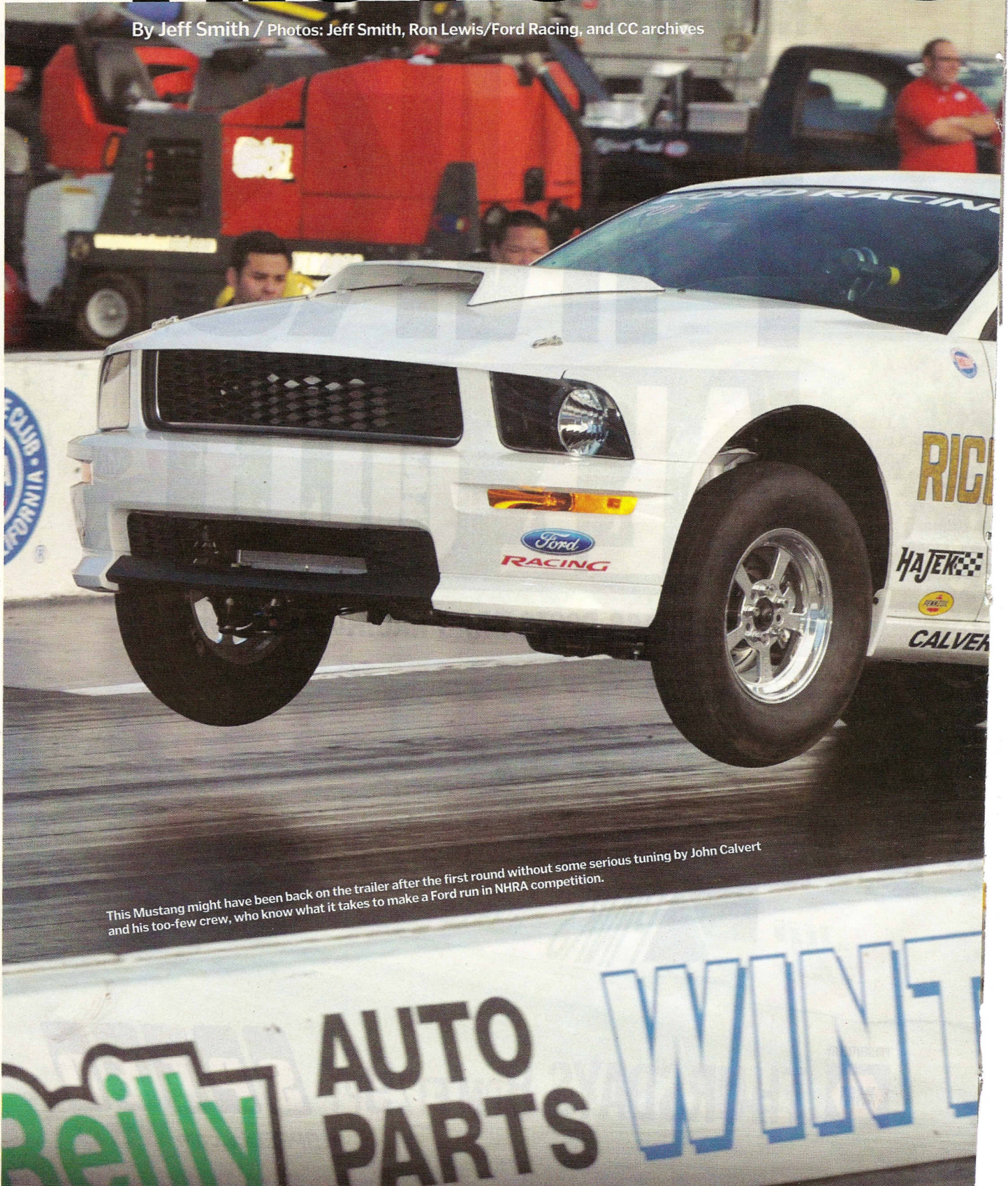
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# HISTORY'S

By Jeff Smith / Photos: Jeff Smith, Ron Lewis/Ford Racing, and CC archives



This Mustang might have been back on the trailer after the first round without some serious tuning by John Calvert and his too-few crew, who know what it takes to make a Ford run in NHRA competition.



# COBRA JET

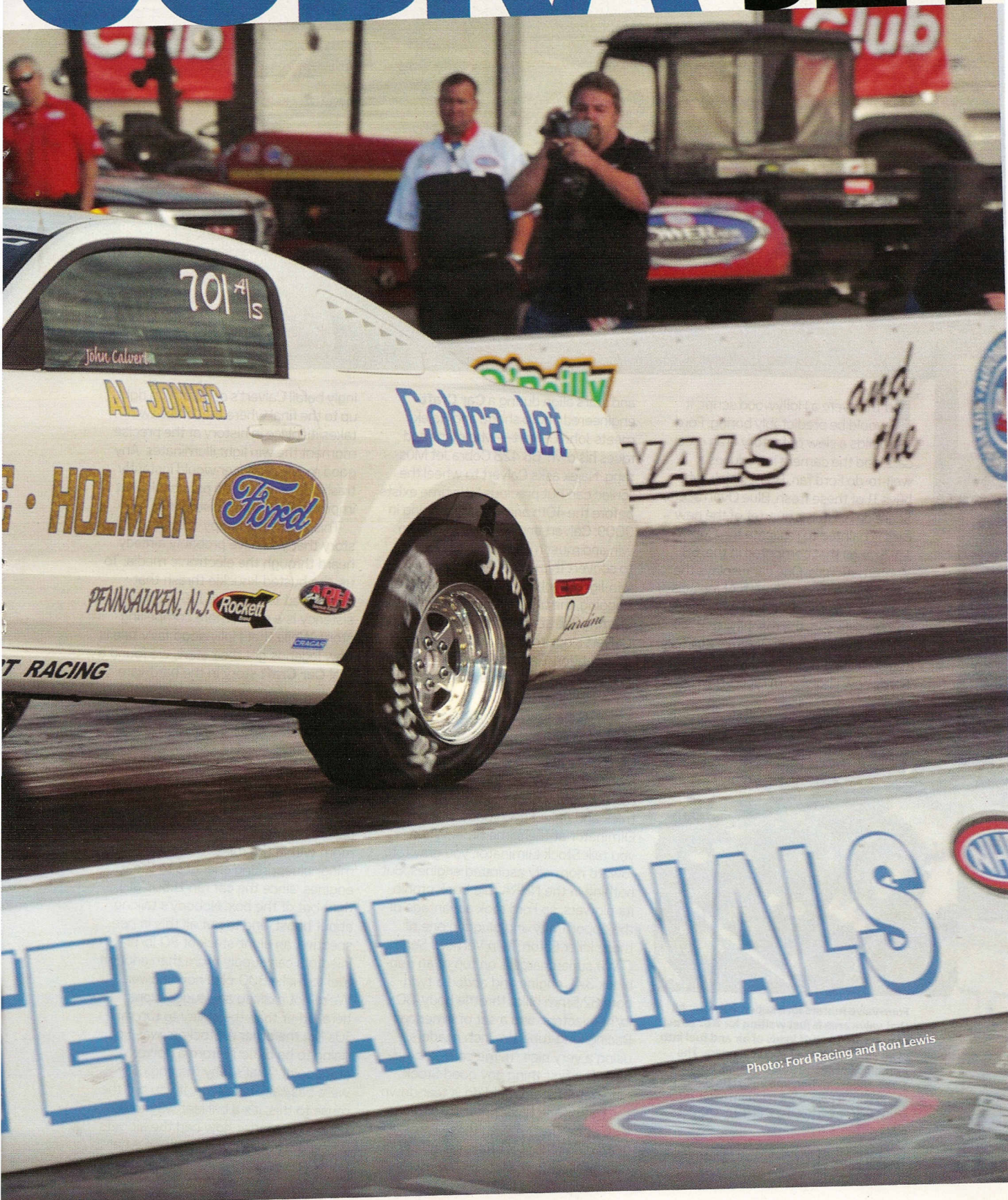


Photo: Ford Racing and Ron Lewis





Here's what every Ford drag race lover needs in his garage. The front car is the '09 Winternationals-winning car in the Rice-Holman tribute colors. The '68 in the center is Calvert's personal Super Stock 428 CJ. The third car is the AA/Stock Cobra Jet driven by Jim Waldo painted in Foulger colors.

If this were a Hollywood script, it would be predictably boring. Ford builds a slew of factory drag race cars, and the camera introduces a well-to-do Ford fan, Brent Hajek, who buys 11 of these fresh, Blue Oval racers. Scant days later, a quartet of the new cars is painted to replicate the Cobra Jet 'Stangs that competed in the '68 Winternationals. One car displays the Rice-Holman moniker with Al Joniec's name across the door, and it becomes the favorite son, the machine that honors Joniec's '68 Super Stock victory that solidified the 428 CJ Mustang as Ford's new showroom racer. The moon

and stars align during a **Car Craft**-engineered photo shoot, and Hajek meets John Calvert—who owns and races his own '68 428 Cobra Jet Mustang. Hajek asks Calvert to wheel the Joniec car. But precious little time exists before the 40th anniversary running in 2009. Calvert and his guys are out to win and must make a rash of tweaks to convert this untested ride into a win-light machine. After four weeks of flogging, the tribute racer rolls up to the starting line at the Winternationals, and Calvert slogs through seven rounds of competition. Perhaps even more bizarre is the series of mistakes that amaz-

ingly befell Calvert's competition right up to the final where the Joniec twin takes its place in history at the precise moment the win light illuminates. Any good movie producer would instantly trash this script as too predictable. But improbability makes history fun.

This is just the happy-talk side of the story that you have probably already heard through the electronic media. To us, the busted-knuckle thrash that demanded 10-teens at 126-mph consistency is a much more compelling story. While that Hollywood fairy tale is how legends get their start, we found a real **Car Craft** story in the hardware.

## ENGINE

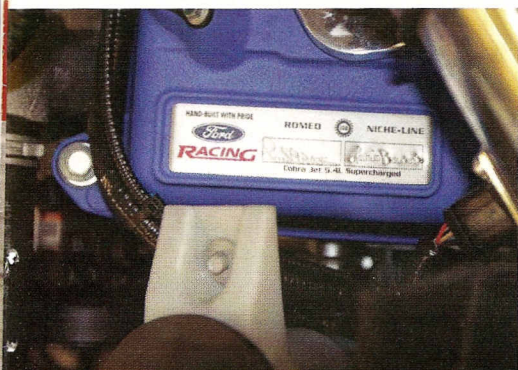
Here's where you would think drag race technology would be at its pinnacle, but Ford took a slightly different track and nuked everybody in Stock Eliminator at the same time. When you talk Stock Eliminator, you gravitate toward normally aspirated engines. But nothing in the NHRA rule book prohibits blowers, so Ford took advantage of the opportunity and plugged one of those killer Eaton Twin Vortices Series (TVS) superchargers on top of an iron-block 5.4L engine and added a twin-bore 62.5mm billet throttle body, 80 lb/hr injectors, and a set of American Racing long-tube 1 7/8-inch headers, using a very nice merge collector system. The first thing any good Stock Eliminator racer would do is tear down the motor and blueprint it to within an inch of its life. But with these Fords, according to Calvert Racing's chief fabricator, Matt Bernasconi, "The motors

are untouched. This one [the Rice-Holman car] is just like the one that just came off the truck." That sounds like typical racer spin but only until you realize that Ford's 425hp label leaves room within the rules. There were minor blueprinting changes to the engines, since the car ran 11.50s at 120 right out of the box. Nobody's talking about boost, and to put all this in perspective, an eight-stack of 80 lb/hr injectors can supply more than enough fuel to make 800-plus horsepower. We're not making any suggestions here, other than the ability to run mid-10s like the other A Stockers was not going to be difficult from a power standpoint. That's why the engines were basically left alone. If you put the muse to this, it's a brilliant way to go racing. No matter how bad the air gets, you know horsepower won't be what holds you back.



Four-valve motors love superchargers. All that valve area is just waiting for 8 or 10 psi of pressure to stuff loads of air and fuel into even smallish 5.4L (330ci) cylinders. The iron-block package mounts stock heads, a TVS supercharger, and an SFI damper, along with a twin-bore 62.5mm billet throttle body, long-tube headers, and an A/C-delete pulley. That's it.





Left: The engines are all hand-assembled at the Romeo plant, and you get a plaque to prove it.

## “It doesn’t sound much like a race car, does it?”

Overheard at the Calvert shop during the CC photo session

### DRIVETRAIN

Here’s where the real work started. Calvert’s crewmembers Matt Bernasconi and Mike Hernandez are the two main thrashers, and they also work at Calvert Racing. Two cars were delivered on December 27 as delayed Christmas presents with a dangerously short lead time to be competitive race cars by the second week of February’s Winternationals. The decision was to have four cars altogether with each car in a different class spanning A/Stock, AA/Stock, A/Stock Automatic, and AA/Stock Auto. The only real difference between A and AA/Stock is the AA cars can carry 0.5 lb/hp less weight (at 425 hp, this means the AA cars are a touch more than 210 pounds lighter) and therefore have a quicker index. Stock Eliminator is a unique eliminator because you must qualify, but as long as the car runs under its class index, it runs against a dial-in. If the car runs more than 1.4 seconds under the index any time during the race, the index is subsequently adjusted downward. This is something you try not to do, since it makes qualifying more difficult.

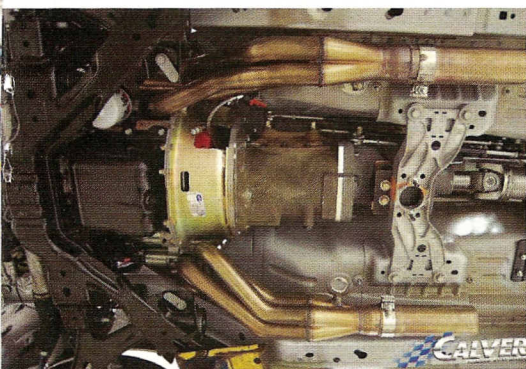
Mike says the six-speed in the Rice-Holman car that Calvert would drive was balky to shift right out of the gate, so the unanimous decision was to pull the G-Force four-speed trans out of Calvert’s ‘68 CJ Mustang and stuff it in the new car. “That,” Matt admits, “was

a lot tougher than it sounds.” It also demanded a much better clutch, so the call went out to McLeod for a bellhousing and a clutch. McLeod is now under new ownership, with original entrepreneur Red Roberts back in the hunt, providing the Calvert crew with a McLeod Modular bellhousing to adapt the G-Force to the modular 5.4L motor. McLeod also supplied a twin-disc Magnum Force clutch assembly that combines light weight and a diaphragm pressure plate to direct all that power back to the factory-installed 9-inch using a Ford Racing aluminum driveshaft in between. With the Cobra Jet’s obvious sub-10-second-e.t. potential, a production 8.8 rear axle assembly would have been of questionable durability, so Ford stepped up with a completely fabricated 9-inch housing. Calvert chose to run 35-spline Strange axles and a spool with this combination spinning a 4.57:1 Pro Gear assembly. Strange also supplied the rear brakes.

While the cars originally came with a set of Goodyear slicks mounted on Cobra Jet-spec Bogart aluminum wheels, Calvert’s car pulled up to the starting line with a pair of 30x9.0-15-inch DO7 compound Hoosiers using Bogart 15x10-inch wheels. The 28x4.5-15-inch Mickey Thompson front tires are mounted on M/T aluminum wheels.



The cold-air package picks up air toward the front of the fascia rather than from the hoodcoop.

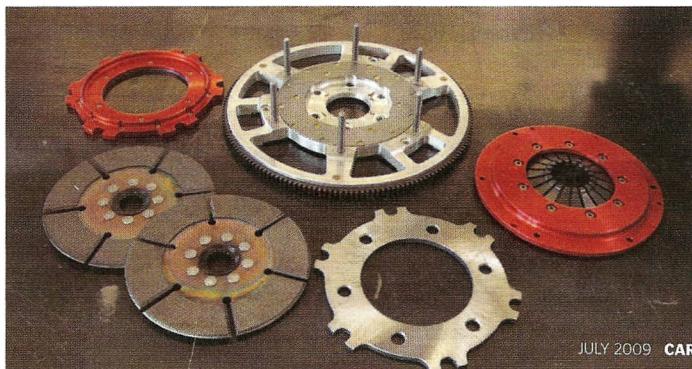


This is what a magnesium case G-Force four-speed looks like sitting behind a McLeod Modular SFI steel bellhousing. The box is equipped with a steep 3.16:1 First gear.



Left: The unique shifter arrangement was more about not cutting up the car than anything else. The shifter in the stock location is the Reverse handle. To shift, grab the main shifter and curved handles, squeeze them together, and push the whole package forward into First. Still squeezing the two handles, pull straight back for Second gear. This is a Long-style vertical gate shifter, so to hit Third, release the curved handle and push forward, then pull back for Fourth. Do all that exactly at 6,800 rpm, don’t lift, and make sure to use that clutch pedal because a clutchless trans is illegal in Stock Eliminator.

This is the two-disc McLeod Magnum Force clutch and flywheel assembly. Note that it’s a diaphragm unit with an aluminum flywheel and sintered iron clutches. McLeod also makes a Soft-Lok clutch that is based on a fully adjustable, three-finger, Long-style pressure plate. A predetermined amount of slippage on the starting line makes these racing clutches repeatable and reliable.







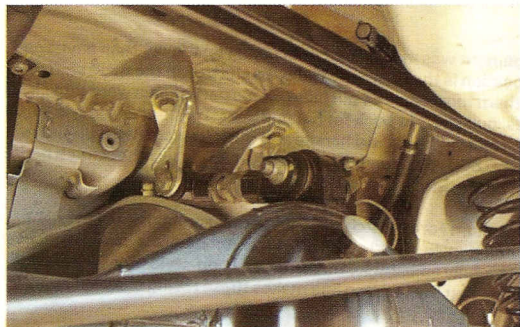
The 9-inch rear housing assembly also came under the Mustang from Ford. Calvert runs a 4.57:1 rear gear with lots of Strange parts, including a spool, 35-spline axles, and rear disc brakes. The Cobra Jet cars also came from the factory with this fabricated aluminum sway bar mount system from Dave Zimmerman's Team Z Motorsports. The mount bolts to the rear lower rear control arm bolt to locate a pivot point for the sway bar. Adjustments to the turnbuckle can create preload in the rear suspension.

## SUSPENSION TUNING

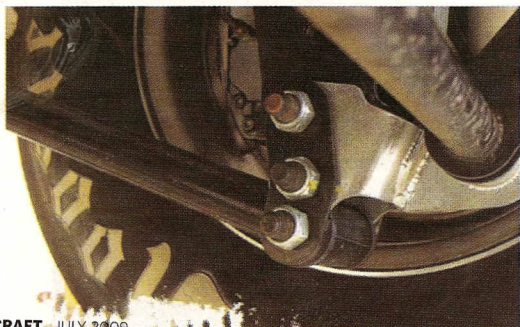
As with any professional approach, Calvert's big win makes the work appear easy and perhaps simple to attain. But when we started breaking down the steps the team took to get to the first round of qualifying, the real story was all about lots of testing. First, Calvert lowered the rear control arm mounts at the housing to move the rear suspension's instant center rearward to help the launch. Then he had to come up with Rancho adjustable rear shocks to produce the desired rebound valving necessary to get the proper plant for the rear tires. The shocks offer a nine-way rebound adjustment, a strong  $\frac{5}{8}$ -inch shaft, and sufficient length to allow the car to plant the rear tires with body separation. In the midst of all this shock and instant center tuning, the team also established the car's proper pinion angle. In tandem with the rear suspension tuning, Calvert experimented with some custom-valved front struts to generate the ideal front end rise rate. Calvert is still experimenting with the front pieces, and production parts will follow.



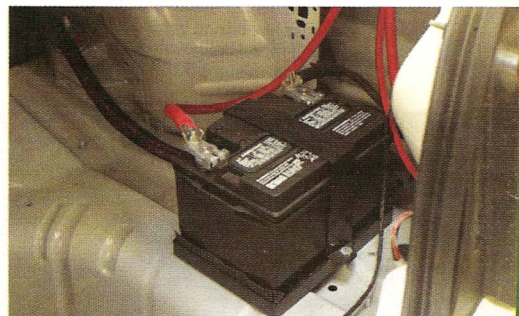
Strange supplied the gears, 35-spline axles, and rear disc brakes for the 9-inch.



The stock Mustang single upper control arm mount for the three-link required a Z Motorsports custom steel piece along with an adjustable-length upper control arm that makes establishing pinion angle a little easier.



Calvert lowered the stock rear control arm mounting point to shorten the instant center and plant the tires harder on the launch.



All the FR500CJ cars started out as body-in-white shells to keep the weight down, and then each also had the batteries relocated to the trunk.



## BUILD YOUR OWN

Ford only built 50 of these cars, but if you wanted to replicate the effort, it would be expensive but possible. Ford actually offers the body in white over the counter, but it would be a good idea to buy a wrecked V-6 Mustang for all the little parts that would be otherwise too expensive to purchase individually. The accompanying part numbers are incomplete because it is probably too early to get all the gritty price details. The idea would be to build a replica or tribute car that would be as close as possible to the real cars, but you'd want to make sure everyone knew this was not a real factory effort—misrepresenting a car like this would be bad form.

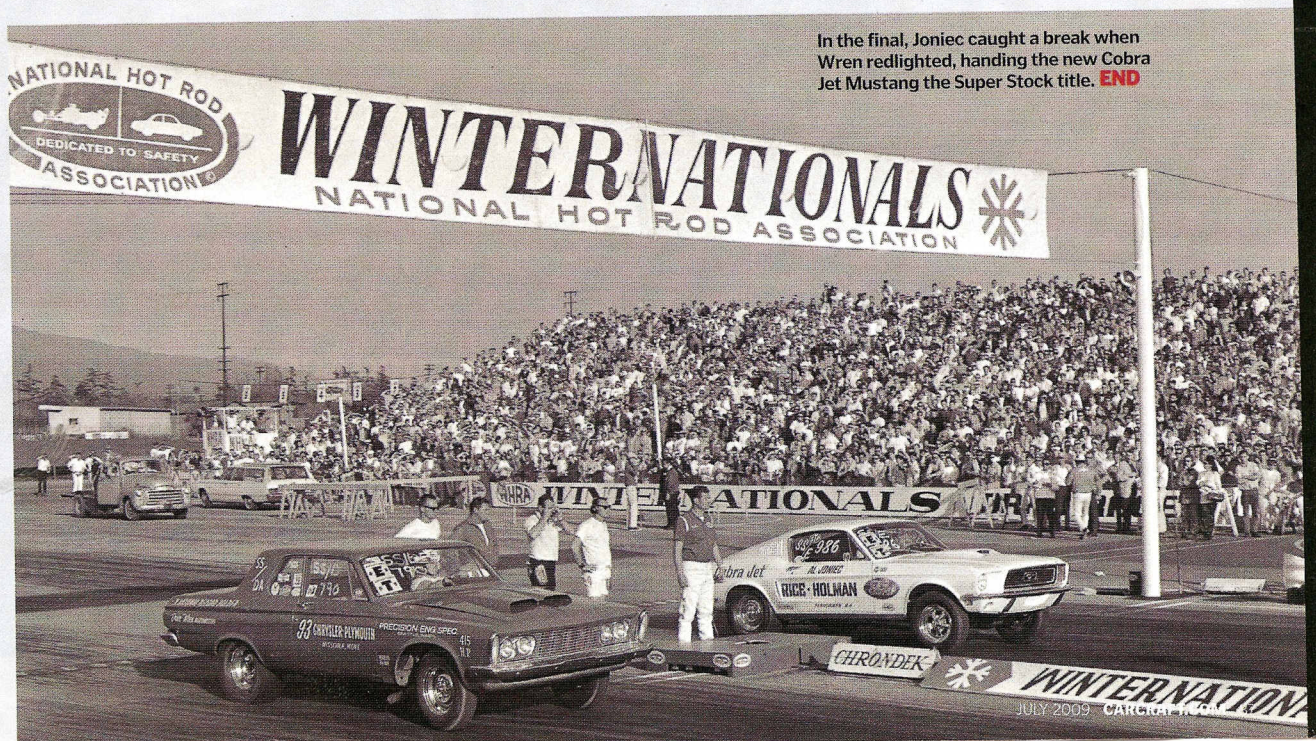
DESCRIPTION	SOURCE	PN
5.4L Cobra Jet engine	Ford Racing	M-6007-CJ
Dual 62.5mm throttle body	Ford Racing	M-9926-CJ
A/C-delete pulley	Ford Racing	M-19216-M54SC
SFI crankshaft damper	Ford Racing	M-6316-CJ
Cold-air kit	Ford Racing	M-9603-CJ
Headers, off-road	Ford Racing	M-9340-CJ
EGR lock-off plate	Ford Racing	M-9Y456-CJ
9-inch rearend	Ford Racing	M-4001-CJ
Driveshaft	Ford Racing	M-4602-CJ
Driveshaft loop	Ford Racing	M-5478-CJ
Bellhousing, six-speed	Ford Racing	M-9392-CJ
Six-speed with bellhousing	Ford Racing	M-7003-CJ
Painted body in white	Ford Racing	M-607100-CJ
Front wheel, 15x4	Ford Racing	M-1007-CJF
Rear wheel, 15x10	Ford Racing	M-1007-CJR
Adjustable damper kit	Ford Racing	M-18000-C
Lightweight radiator support	Ford Racing	M-5019-CJ
Drag race spring kit	Ford Racing	M-5300
Spring kit	Ford Racing	M-5300-Q
Control arm/antiroll kit	Ford Racing	M-5649-CJ
Cobra Jet seat covers	Ford Racing	M-6360004-CJ
Hoodpin kit	Ford Racing	M-16700-B
Snake fuel cap	Ford Racing	M-2301-S
Cobra Jet hood scoop	Ford Racing	M-1660-CJ
Tach	Ford Racing	M-17360-CJ
Oil pressure gauge	Ford Racing	M-9278-BFSE
Vacuum/boost gauge	Ford Racing	M-11622-BFSE
Water temp	Ford Racing	M-10883-BFSE

## WINTERNATIONALS, 1968

Ford's debut for the '68 Cobra Jet Mustang was nothing less than ostentatious. The factory supplied eight cars to various name drivers at the time to make a big splash at the first race of the '68 NHRA season. It bears mentioning that within the production car classes, Super Stock was roughly equivalent to Pro Stock racing of today in terms of popularity. So this made Ford's effort that much more important. Dyno Don Nicholson, Gas Rhonda, Hubert Platt, Al Joniec, Jerry Harvey, Carl Holbrook, Bill Ireland, and Phil Bonner were all given cars that were actually merely 390 Mustangs that had been fitted with 428 CJ engines prepared by Holman Moody's West Coast shop run by Bill Stroppe. These cars ran in SS/E and SS/EA. Unlike today, each class ran its own elimination, sending one car on to face the rest of the Super Stock class winners and other cars that qualified based on low e.t. Joniec defeated Hubert Platt for the SS/E win in an all-Mustang class final and then went on to meet Mopar driver Dave Wren in his Max Wedge-powered SS/DA '64 Plymouth in the final. This win set up Ford to come back 40 years later to repeat the feat.

### →SOURCE

**Ford Racing Performance Parts;** Dearborn, MI; 800/FORD-788; [fordracingparts.com](http://fordracingparts.com)



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