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Tech Transfer

EXPERTS AND ENTHUSIASTS DISCUSS THE PAST, PRESENT, AND FUTURE OF MODULAR FORD PERFORMANCE AT AETC 2009

Text and Photos by KJ Jones



"Knowledge is good." We're pretty sure a lot of you are too young to recognize this quote as the motto of Faber College, the fictional institute of higher learning where John Belushi and his maniacal fraternity wreaked havoc in the 1978 comedy-classic, *Animal House*. While the statement may have come about a long time ago, there's certainly no disputing its premise. Knowledge, indeed, is good, and it's something any Mustang enthusiast worth his salt will always seek.

We meet and hear from many of you who think that we magazine guys (Editor Steve Turner, Associate Editor Mike Johnson, and your tech editor) know everything there is to know about late-model Mustangs. While our crew, as a collective unit, does

► The huge networking opportunity definitely is one of the cooler aspects of the AETC. During the break sessions, attendees at the 2009 gathering were able to engage in one-on-one conversations with mod-motor product developers like Al Noe of Trick Flow Specialties (right), as well as "magazine guys" such as *Car Craft*'s tech guru, Jeff Smith (left).

▲ Ed Hohenberg of Wolf Performance Engineering (standing at the microphone) listens intently to Ford Racing's former Director of North America Motorsports Brian Wolle's (third from the left, with microphone) comments on the wide range of engine options that will be available for NHRA Stock and Super Stock competition in 2010 during the roundtable portion of the 2009 Advanced Engineering Technology Conference. Modular Ford engine technology was the focus of the annual three-day gathering, which kicks off PRI week in Orlando each December.



Horse Sense: Over the years, the AETC has awarded several Lifetime Achievement Awards recognizing individuals who have dedicated their lives to the high-performance industry. The award's first recipient was the late Don "Sully" Sullivan, the man responsible for originally designing Ford's legendary Flathead V-8 engine (back in the early '30s), who was still punching the clock at SVO (after two retirements) when he received the award at the inaugural conference in 1989—at age 85!



▲ We've featured SCT's XCalibrator and Advantage III tuning equipment in many modular-focused tech reports. The company's owner and calibration expert Chris Johnson shared details on the performance success he's had tuning factory ECMs (including a 1,000-rwhp turbocharged Ford GT) with his products.

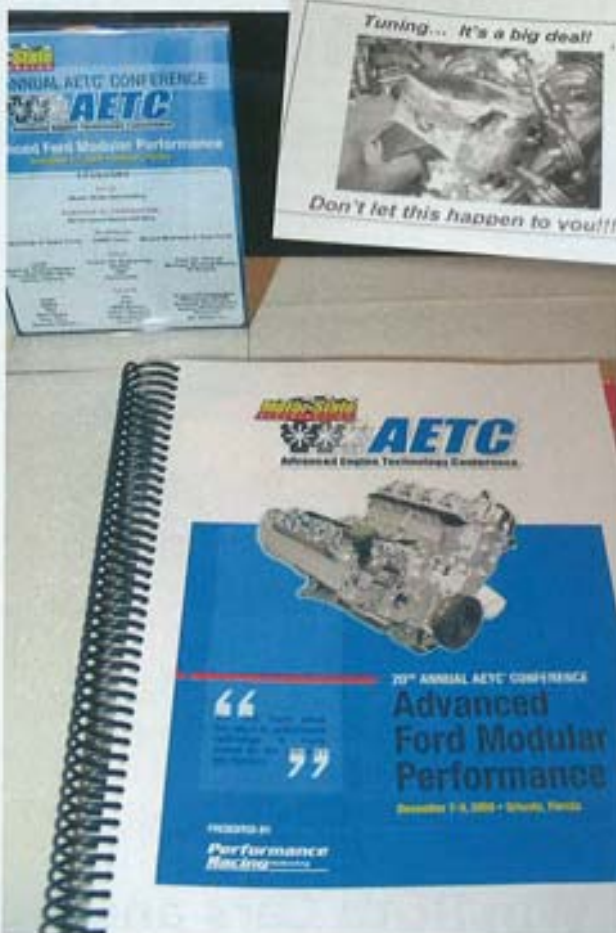
know quite a bit about '79-'10 'Stangs, we're always seeking additional information, whether it's through our work with various aftermarket parts manufacturers or even directly from many of you. When we see some of the technical innovations that you apply on your personal Ponies we love to learn more.

There are instances when our quest for additional knowledge takes us beyond simply gaining it through hands-on experiences. Sometimes we learn new things through telephone conversations and e-mail correspondence. Occasionally we even have the opportunity to actually sit and talk about all-things Mustang with the folks who actually make things happen for our favorite ride.

Your tech editor recently had the pleasure of experiencing this type of unique opportunity at the 20th Annual Advanced Engineering Technology Conference (S.O Mustang & Super Fords was a Platinum sponsor), which was held at the Orlando Convention Center prior to the Performance Racing Industry trade show.

The AETC is a three-day symposium on engine technology, during which insights on various topics such as combustion efficiency, valvetrain stability, ring sealing, gasket sealing, carburetion, rods and pistons, and more, are shared. Attendees range from featured speakers to engine builders, racers, engineers, salesmen, and media. By way of your favorite magazine, you can now get a taste of that knowledge too.

► Each AETC attendee receives a tote bag with a thick, spiral-bound notebook inside. The book contains bio information for each panelist, as well as a printed version of their presentations. Devin Rickey of Power-Tec Engineering used a photo from one of our own catastrophic engine failures to emphasize his message about the importance of tuning for supercharged applications.



► With supercharged Two-, Three-, and Four-Valve modulators as the hot ticket for most 'Stangbangers these days, Jim D'Amore of JDM Engineering was on hand at AETC to offer his thoughts on the components and machining tricks that go into the 9-second street/strip modulators his company builds.

Yes, after many years of diverse discussion platforms, modular Ford engines were the headliners at the '09 AETC gathering. A panel of 13 industry types, highlighted by Ford Racing's former Director of North America Motorsports Brian Wolfe, were on hand for the casual but educational chat with attendees.

We're not sure when AETC will be 100-percent Fordcentric again (circle track racing is the featured topic for the 2010 conference), but we strongly recommend you check the event's official website from time to time for details about future discussions that may be of interest to you.

► SoCal-based, Modular Mustang Racing (www.modularmustangracing.com) made the long journey to AETC and brought along an arsenal of its slick high-performance upgrade pieces for 4.6 SOHC and DOHC engines, which includes sheetmetal intake manifolds.



▲ Speaking of manifolds, Ford Racing Performance Parts (www.fordracingparts.com) also displayed a badass intake of its own; the brand-new composite piece for the 4.6-liter Three-Valve engines in '05-'10 Mustang GTs (PN M-9424-463V).



▲ We ran into Justin Starkley of VMP Tuning (www.vmptuning.com) at AETC '09, and he shared with us VMP's new-design Big Bore inlet elbow for Shelby GT500s with stock or TVS blowers, plus GTs with Roush P51 superchargers. The new inlet facilitates mounting a dual-bore, 72mm throttle body (or a large monoblade piece) onto its face using the OEM bolt pattern, and eliminates any need for port matching the throttle body or inlet. Notice how the inlet opening has been reformatted into a D-shape. Justin says this maximizes and improves airflow by opening up the inlet of the blower, and using a throttle body that will take advantage of the flow capabilities of the new inlet.

ON THE PANEL

The 20th Annual Advanced Engineering Technology Conference was headlined by an outstanding panel of Ford modular-engine product manufacturers, designers, builders, tuners and racers. Here is a rundown of the speakers and topics:

AL NOE, TRICK FLOW SPECIALTIES

"Designing the Ultimate High-Performance Modular 2V Cylinder Head"

JIM D'AMORE, JDM ENGINEERING

"Advanced Building and Tuning of Supercharged Mod Motors"

DEVIN RICKEY, POWER-TEC ENGINEERING, LLC
"Advanced Supercharger Technology for the Modular Engine"

DAVID CLINTON, DARTON INTERNATIONAL INC.
"Advanced Cylinder-Sleeve Technology and Building Big-Inch Mod Motors"

KYLE CARROTHERS, ROUSH INDUSTRIES
"Developing the Mod Motor Roush Ford Super Stocker"

JEFF LYJAK AND ROB DENEWETH (CO-PRESENTING), FORD RACING
"An Insider's Look at Ford's Modular, From Inception Through Racing 2010 Cobra Jets"

BRIAN WOLFE, FORD RACING
Round Table Panel Discussion, "The Vision of Ford Racing"

JOHN MADDOX, ROUSH YATES ENGINES
"Developing 4V Mod Fords for Daytona Prototype Racing and Ultimate Performance"

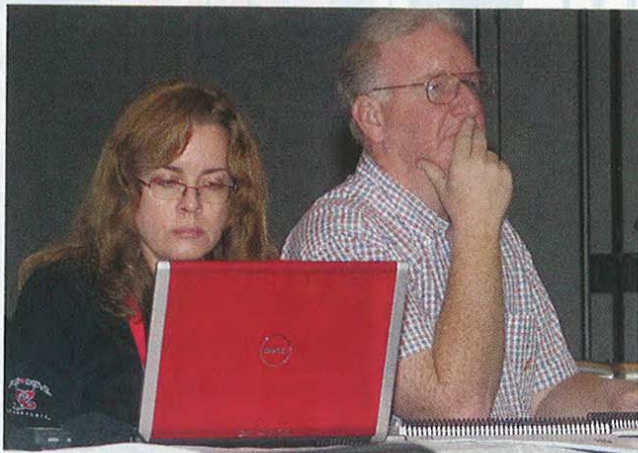
RICHARD HOLDENER, AUTOMOTIVE WRITER
"Developing Compound-Forced Induction for Ford Mod Motors"

CHRIS JOHNSON, SCT
"Advanced Performance Tuning of Mod Engines and Factory ECUs"

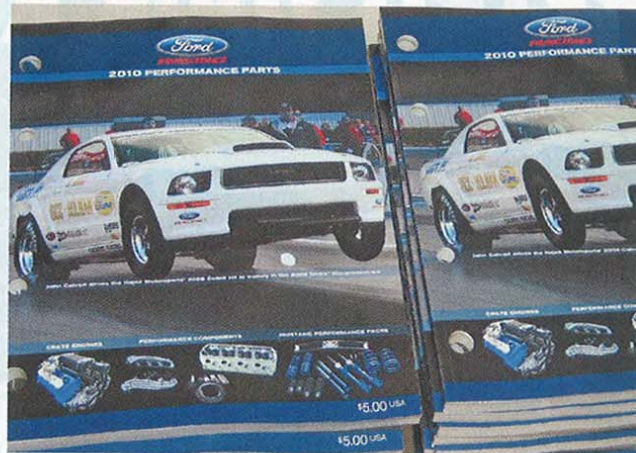
JOE PANDO, MSD IGNITION
"Advanced Theory and Application of Performance and Racing Ignition for Ford Modular"

SEAN ANDREW, DIAMOND RACING
"Understanding Advanced Piston Technology and Optimizing for Ford Mod Motors"





▲ NMRA Modular Muscle racers Donnie Bowles and Susan McClenaghan (second and third in 2009 points) were on hand at AETC, taking advantage of the information being presented by industry experts.



▲ Although Ford Racing Performance Parts' new catalog is technically released at the PRI show each year, a few lucky AETC attendees were able to snag copies of the 2010 document a few days early. **5.0**

BEST IN STOCK

We always receive questions asking about "the best" stock pieces for building an engine. Years ago, back when 5.0-liter pushrod bullets were all the rage, the Internet was abuzz with enthusiasts sharing info on castings. We've noticed similar talk about the mod-motor components (Two-, Three-, and Four-Valve). Here is a rundown of preferred blocks and heads for high-output applications, according to Rob Deneweth and Jeff Lyjak of Ford Racing:

BLOCKS

- 4.6 Cast-Iron Blocks: Windsor
- 5.4 Cast-Iron Blocks: Windsor after 2001
- 4.6 Aluminum Block: Three-Valve Mustang

HEADS

- Two-Valve PI Heads: Windsor after November 2002; Romeo after November 2003
- Three-Valve Heads: All after October 2007; Mustang-only after 2009 model year
- Four-Valve Heads: 2C5E (Aviator, Mach 1, Marauder), Ford GT and Shelby GT500



SOURCES 5.0

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