

MANAGEMENT & LEADERSHIP

Putting Ford on Fast-Forward

To outrun rivals, company engineers revamped the development process for a new pickup engine

By David Kiley

Adam Gryglak had what seemed like an impossible task: deliver an all-new Ford diesel engine in 36 months. Ford was way behind schedule, so the time frame was a year faster than usual. Gryglak, the chief diesel engineer, knew he'd never meet his deadline without short-circuiting the usual development process. So he put together a team, moved off campus, and kept his second-guessing bosses at bay. Gryglak called the project Scorpion (after the heavy metal band the Scorpions) and came up with a logo featuring a menacing mechanical insect.

In mid-September, on schedule and to strong reviews, Ford unveiled the new Super Duty pickup—powered by Project Scorpion's engine—at the Texas State Fair. Gryglak had shown that the classic skunkworks model pioneered by Lockheed-Martin in the 1930s could help Ford protect its flank, in this case the highly lucrative market for contractor-grade pickup trucks. "We have a good product-development system," Gryglak says. "The key was to respect what we have and the people who run it, deconstruct it a bit,

and make it better to suit our target."

Gryglak's task was doubly difficult. For one thing, Ford had previously outsourced the design and manufacture of the engine, known as the Powerstroke, to truck and engine maker Navistar. What's more, the Powerstroke brand



had eroded in recent years because of quality problems. Gryglak didn't just need to design and build an engine in-house from scratch—he needed to vastly improve it if Ford were to keep dominating the market for large pickups, which in good years have generated much of its overall profit.

Like all big companies, Ford has a strict product-development hierarchy. It works well enough nowadays that

the carmaker can get new models from blueprint to showroom as fast or faster than its rivals. Going offsite inevitably made executives anxious. But Gryglak's pitch got a better reception than it might have, say, five years ago, when turf-obsessed managers tended to look unkindly on heterodoxy.

In October 2006, Gryglak began recruiting his team of engineers. He discovered that not everyone was eager to work beyond the bounds of Ford's familiar environment. Some engineers craved structure. "We had people self-select out because they weren't comfortable working outside their comfort zone," says Gryglak. But others couldn't wait to be asked. Ken Pumford, an engineer from Ford's Kentucky truck plant, moved from Louisville to Dearborn, Mich., to join the project.

It wasn't long before the benefits began to emerge. Specialists used to working only with their own kind became more familiar with what other engineers were up to. "We saved months by knowing hourly what the other guys were thinking and what their problems were," says Pat Morgan, a veteran Ford engineer. "The result was that the engine fit into the truck perfectly the first time, and that almost never happens."

The team also let go of certain Fordisms. The company has long forced suppliers to adapt their technology in hundreds of time-consuming ways to Ford specifications. Engineers, after all, justify their paychecks by coming up with engineering tweaks. With time short, the team learned to trust

The team's Scorpion mascot, named for the heavy metal band

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Gryglak: His bosses forced themselves to stay in the background

suppliers more. For example, Ford let the German company Bosch work on the engine's antipollution device with minimal reengineering for its own sake.

FUN AND GAMES

Freed from the rigid atmosphere of Ford's tech center, the engineers let themselves have fun. They played jokes on each other, building full-size snowmen, decorated with machine parts, on one another's desks. Gryglak also encouraged friendly competition. In August 2007, after months of R&D but before starting to build the engine, the team organized a Pinewood Derby competition. Design and mechanical engineers, of course, weren't about to whittle cars from wood the way Cub Scouts do. They milled cars out of aluminum. Some had remote controls and electric motors.

As the team worked in isolation, Gryglak's bosses had a hard time staying in the background. Bob Fascetti, Ford's chief engineer of big engines, forced himself to check in with the

team only every four to six weeks instead of the usual weekly or biweekly intervals. "It was tough for me to do," he says. "But to keep [the project] on track, I convinced my bosses it would be better to leave them alone." Fascetti says things got tense when Team Scorpion decided to build the engine out of a lighter material that would make the truck more fuel-efficient. Doing so was more expensive, with a greater risk of failure. By the time Fascetti and his own bosses found out, the decision had been made. Gryglak faced some tough ques-

tioning, but he got the green light.

The new Super Duty truck goes on sale in the spring. Ford says the engine will be the first of its kind to use state-of-the-art antipollution technology that meets new federal regulations. The truck also will have the best fuel economy in its category and won't need significant maintenance for 300,000 miles. The best part, says Tony Hudson, a Project Scorpion engineer, is that the team pulled off what initially had seemed impossible. "That," he says, "will give us license to do it again." |BW|

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