

# February 11, 2008 World

# MRIUALLY AMAZING

Ford's digital design processes speed product development

### FLEX EXCITEMIENT BUILDS

New crossover already garnering interest from customers, media, p. 2

### SAFETY NET

Learn how to keep your family safe online, p. 4







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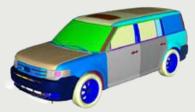


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#### INSIDE This Issue | NEWS Briefs



#### 7 Building Smarter

Ford's use of high-tech virtual tools is helping it get high-quality products to market faster and more efficiently.

2 Talk of the Town New Ford Flex is already causing a buzz.



- 3 January Sales Report Sales of Ford crossovers stay strong.
- 4 Safer Surfing Tips for keeping safe on the Internet.



6 Building on its Strengths Improvements to Super Duty chassis add to its capabilities.

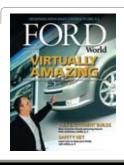


15 Global Notes Southern Africa invests. WRC season kicks off and Ford **Motor China is** honored.



#### 16 Calendar

A look at upcoming Ford Motor Company and automotive-related events.



#### Cover Photo

Jeff Nowak, chief designer, Studio 2000X (Ford Product Development's digital design support team), uses Ford's powerwall technology to look at a design image of the Flex.

#### Ford of Canada starts '08 with sales jump

Ford Motor Company of Canada, Limited, rang in the new year with an overall sales increase of 9.6 percent. Ford trucks led the charge with a 14.8 percent rise over last year's totals for the month. And while Ford car sales slipped 5.1 percent, sales of the redesigned Ford Focus were up 22 percent and Ford Mustang marked a 6.5 percent increase in January. Other highlights included increases for Edge, up 151 percent; Escape, up 60 percent; Taurus X, up 36



Ford Focus sales were up 22 percent in Canada in January.

percent; Explorer, up 31 percent; and Lincoln MKX, which notched a 29 percent sales rise.

#### Mazda January sales are best in 14 years

Coming off a year in which its sales grew more than 10 percent, Mazda North American Operations reported its best January since 1994, with sales of 21,212 vehicles for January 2008, a 10.2 percent increase versus last year. MAZDA6 celebrated its highest January sales, 6,333 units, up 27 percent over last year; the MAZDA5 multi-activity vehicle, which has been freshened for



The refreshed MAZDA5 had its best January ever in 2008.

2008 and only on the market for a short time, also celebrated its best January with sales of 1,699 units, a 28.4 percent increase, Rounding out North American results, Mazda Canada, Inc. (MCI) and Mazda Motor de Mexico (MMdM) also began the New Year on the right track, with MCI notching its best January with sales of 4,732 vehicles, a 6 percent increase, and MMdM reporting an increase of 68 percent, with 1,850 vehicles sold.

#### Reserves recognize Ford's support

Affirming a longstanding company policy, Ford President and CEO Alan Mulally recently signed an official statement of support for Ford employees serving in the National Guard or Armed Forces Reserve. "This is a phenomenal partnership, and you can count on our continued support," said Mulally. During a ceremony at World Headquarters that included Thomas F. Hall, assistant secretary of defense for Reserve Affairs, and Vice Admiral John G. Cotton, the highest-ranking official in



Alan Mulally signed an official statement of support for Ford employee reservists.

the Navy Reserves, Mulally accepted a commendation of Five Star Recognition from the National Committee for Employer Support of the Guard and Reserve (ESGR). More than 2,200 reservists are employed by Ford and an estimated 7,400 military and National Guard veterans work for the company. Not only does Ford follow federal regulations that guarantee returning veterans and members of reserve units the jobs they would have had if they had not performed military service, it supplements their military pay to match their Ford salary while they are on active duty.

#### Auto Hall of Fame honors Ford's Cischke

Sue Cischke, senior vice president, Sustainability, Environment and Safety Engineering, was awarded the Automotive Hall of Fame's 2008 Distinguished Service Citation at the National Automotive Dealers Association convention in San Francisco. Cischke is responsible for establishing Ford's long-ranging sustainability strategy and environmental policy, helping to develop the products and processes necessary to satisfy customers' needs for safe, fuel-efficient, and environmentally friendly vehicles. "As a leading advocate for environmental and safety engineering, Sue is making an outstanding contribution, not only to Ford Motor Company, but to the industry as a whole," said Jeffrey Leestma, president, Automotive Hall of Fame.



Sue Cischke was recognized for her contributions to both Ford and the industry.

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# Flex excitement builds as production nears

#### **BY JOHN FOSSEN**

**FORD World** 

When Ford engineer Louis Jamail takes a Ford Flex prototype on the road, he leaves the garage armed with a stack of business cards. The cards are not for him, though – they are specially designed to introduce the Flex to strangers.

"We pass them out like mad," said Jamail, one of several Ford Flex Vehicle Dynamics engineers who have begun road-testing the prototype. "The team probably handed out several thousand last year."

Since last spring's Ford Flex debut at the New York International Auto Show, the new crossover is no longer camouflaged when it is taken out on the road, and a lot of people are noticing.

Whether in Las Vegas, Phoenix, Los Angeles, San Diego or Dearborn, Jamail says the Flex is an attention getter. A recent experience with a man in a Chrysler 300C is not uncommon.

"He rolled down his window and waved his arms to get my attention while we were stopped at a traffic light," explained Jamail. "He asked if it was the new Flex. I said, 'yes.' He said it was really cool. He knew all about it, too. He said he'd read about the vehicle on the Internet."

Inundated with questions about Flex, the development team asked that business cards be printed with vehicle facts and a Web site URL indicating where customers can go for more detailed



#### It's Knight time!

The much-anticipated premiere of the new *Knight Rider* TV movie — starring the Shelby GT500KR — is Sunday, Feb. 17, at 9 p.m. ET on NBC. In this two-hour film, Ford's 540-hp King of the Road, shown here with co-star Justin Bruening, plays the role of KITT, a high-tech crime-fighting car capable of hacking into computer systems, shifting its shape and color, and using its artificial intelligence to foil the nefarious plots of the bad quys.



Ford Flex prototypes await more test driving in the mountains near Death Valley, Calif., to ensure production models will meet customer expectations.

information. The site address is www.fordflex.com. By late last year, it had more than a million hits.

"That's really impressive, considering we haven't done much to advertise Flex yet. That will come later this year," said Kate Pearce, manager, Ford Flex Marketing. "Right now, we're letting consumers create the buzz, and it's been very positive, very encouraging."

Pearce describes early market research in Los Angeles and Atlanta as phenomenal.

"Consumers are telling us that Flex is a gorgeous vehicle – unlike anything else on the road – and it truly signals to them a turn in the right direction at Ford Motor Company," Pearce said.

Erich Merkle, an auto analyst for consulting firm IRN, also likes the Flex. He says it is a "great vehicle" that is unlike anything else on the road.

"And that's one of the things that I look for in trying to gauge success. I look for things that are really going to make an impact and make people say, 'what's that?' You really need something that is going to stand out in that sea of sameness," Merkle explained.

Such early excitement bodes well for this new addition to Ford's crossover lineup, which is already making a strong impact on customers.

Combined Ford, Lincoln and Mercury crossover sales paced the industry last year with a gain of 62 percent. The Ford Edge challenged established foreign models for supremacy among midsize crossovers, selling 130,125 units, 30 percent better than originally forecast.

When the Flex arrives this summer, Ford dealers will have a new, larger crossover capable of holding up to seven passengers – as well as the segment's attention.

"Dealers are looking forward to the Flex," said Jim Seavitt, owner, Village Ford in Dearborn. "I think the Flex will be very unique. It will be a cutting-edge vehicle."

In the meantime, Jamail and the Flex development team keep an ample supply of business cards on hand and continue to refine a vehicle that he says already is excellent.

"I get excited when I talk to people about Flex because all the attributes that make it a high-quality vehicle have really come together. I think when people drive it, they will really be impressed," he said.

The 2009 Ford Flex will be built at Ford's Oakville Assembly Complex in Canada, which also produces the Ford Edge and Lincoln MKX.

#### **MONTHLY Sales**

# Crossovers, Focus post strong January sales

#### **BY JOHN FOSSEN**

FORD World

Strong demand for Ford's crossover vehicles continued in January, with U.S. sales of the Ford Edge up 95 percent and Lincoln MKX climbing 78 percent versus a year ago. The new 2008 Ford Focus also posted a strong performance, up 44 percent.

Overall, the company's U.S. sales dipped 4 percent. That compares with declines at Toyota (down 2 percent), Honda (down 2 percent) Nissan (down 8 percent) and Chrysler (down 12 percent). GM posted a 2 percent increase, although it's believed that much of the gain came from highly incentivized small-car sales.

All things considered, Jim Farley, group vice president, Marketing and Communications, said he was pleased with the company's results.

"Our dealers really delivered this month, despite a challenging economic and competitive environment," said Farley. "It's not going to get any easier – at least for awhile.

"Recent monetary actions and the proposed stimulus package may help the economy later this year, but we're not pinning our hopes on that. Our plan is based on restructuring our business to be profitable at lower demand and changed mix while also accelerating the development of new products that people want to buy."

One of those products is the new Focus, which recorded its third consecutive month of increased sales.

"This is a big deal. Ford's participation in the small-car market at this point is

limited. We have big plans to do more, but for the time being, we have to get the job done with Focus because this is where 45 percent of first-time buyers under 30 years of age enter the car market," explained George Pipas, manager, U.S. Sales Analysis.

Ford Escape sales were up 33 percent. Combined retail sales of the Ford Fusion, Mercury Milan and Lincoln MKZ also increased. There was an 8 percent decline in sales of the F-Series, but it remained the best-selling vehicle in the country.

A new Ford F-150 pickup will debut this fall. This summer, the new Ford Flex crossover and Lincoln MKS sedan hit the market.

# "Our dealers really delivered

this month."

 Jim Farley, Ford group vice president, Marketing and Communications



#### **Vehicle Sales**

2008 January Year-to-Date U.S. Top-Selling Cars and Trucks

Rank/Nameplate Units Sold	
1. Ford F-Series41,125	
2. Chevrolet Silverado 36,122	
3. Toyota Camry 31,601	
4. Honda Accord23,957	
5. Nissan Altima21,635	
6. Honda Civic20,993	
7. Toyota Corolla/Matrix20,736	
8. Dodge RAM19,902	
9. Chevrolet Impala 17,544	
10. Chevrolet Cobalt 17,310	
11. Honda CR-V16,016	
12. Chevrolet Malibu14,541	
13. Pontiac G6 13,942	
14. GMC Sierra13,200	
15. Toyota Highlander12,323	
16. Toyota Tundra12,073	
17. Ford Focus 11,600	
18. Toyota Prius11,379	
19. Ford Econoline 11,333	
20. Ford Escape 11,191	
21. Toyota Tacoma 11,064	
22. Toyota RAV410,897	
23. Ford Edge10,888	
24. Dodge Caliber 10,885	
25. Toyota Sienna10,406	
26. Ford Fusion	

Source: Manufacturers' Reports

#### U.S. Market Share - January 2008



Source: Manufacturers' Reports

### Keeping families safe online

BY REBECCA KAVANAGH

FORD World

The Internet is an integral part of the world in which we live. Unfortunately, so are Internet predators. But many states are working to keep the Net safe for children, with Michigan providing an ideal example of such efforts.

"People who go online to prey on innocent children come from all walks of life," says Michigan Attorney General Mike Cox. "My office has arrested a doctor, a priest, teachers, coaches. But after a couple of years of doing this, we realized that putting these criminals behind bars is not enough. We must also proactively combat the problem by teaching children how to stay safe online."

To do just that, Cox recently established the Michigan Cyber Safety Initiative (Michigan CSI), an Internet safety education program for kindergarteners through eighth graders with age-appropriate school presentations. Student sessions are followed up by a community seminar for parents, but because busy evening schedules make attendance difficult for some, Cox has been seeking alternative venues for his message.

Last month, the Ford Parenting Network

hosted a Michigan CSI presentation in Dearborn. Representatives from the attorney general's office showed attendees the dangers that lurk online and offered advice on keeping their children safe.

"A lot of parents don't understand what's happening in chat rooms and on social networking sites (such as MySpace or Facebook)," says Cox. "We have sample chats we roll through so parents can see how harmless it all appears in the beginning. Then we show them what can happen when kids give out just their names and schools – how predators can easily insinuate themselves into their families without the parent ever knowing."

Ford employees walked away from the Michigan CSI session with instructions on how to view Internet history logs, turn on safe-surfing filters and access their children's MySpace pages.

Stephanie Scheuermann, supervisor, CIRT Digital Forensic Services, didn't waste time putting her new knowledge into action.

"My 10-year-old is very active on the Internet," she says. "I used the list of Internet safety tips as a guide for talking to him about the dangers of what's out there. I'm not worried that he's going to purposefully



put himself in a dangerous situation, but he could easily stumble into something he's not ready for. What I really wanted him to understand is that an Internet stranger is just like a stranger on the street – someone to be avoided."

Scheuermann says she was also upfront with her son about the fact that she'll be purchasing software that will allow her to monitor what he does online, as recommended by Michigan CSI.

"The children who were portrayed as victims oftentimes had too much privacy and not enough limits," she says.

Chris Sorensen, analyst, IT Security and Controls, proposed that Ford host the seminar while he was working with the attorney general's office to bring Michigan CSI to his children's elementary school.

"We have a dedicated staff at Ford that handles IT and keeps bad things from happening at work," Sorensen says. "We

# Computer safety: Not just for kids

If it sounds too good to be true, it probably is – that's old advice for a new world, says Scott Roundy, director, Ford IT Security and Controls.

Roundy says that one of the many ways criminals are targeting computer users is through e-mail messages with tempting offers. Once users click on a link for, say, discounted Super Bowl tickets, their machines are vulnerable to viruses or worse.

"People are trying to capture your personal information for financial gain, or take over your computer and use it for their own purposes," says Roundy. "Whenever there's a big news event – whether it has to do with Britney Spears or the Beijing Olympics – we see the volume of spam go up and an increase in these types of attacks."

Roundy says that Ford employees should be just as cautious at home as they would be at work – and even more so since they probably don't have a team of IT experts sitting in their den watching out for them.

In addition, he says, "we believe that if we can get employees to be more attentive to these issues at home, they'll bring those positive behaviors into the corporate environment, which will positively affect what they do here."

Among the safeguards Roundy offers are:

 Purchase anti-virus software for your home computer. "Most software packages offer subscriptions so you can get updates



# "... you shouldn't trust that everyone else has your best interests at heart."

Scott Roundy, director,
 Ford IT Security and Controls

for a certain period of time," Roundy says. "Be sure to get the updates. I recently helped a family member with a computer problem who hadn't updated their anti-virus software since 2002 – there have been 100,000 new pieces of malicious software released since then!"

- Be careful with new toys. Whether it's a digital picture frame or a USB key you picked up at a tradeshow, anything you plug into your computer has the potential of infecting your machine with a virus.
- Verify that charities are legitimate. If you are contacted by an
  organization requesting a donation and you feel compelled to
  respond, never provide credit card information during that initial
  point of contact. Roundy suggests that you should ask for a
  primary toll-free number and make the call yourself. "Whenever
  you have to divulge financial or personal information, it should
  be you who initiates that conversation," he says.
- Use your credit card when buying online. Roundy cautions against ever providing your bank's routing number to individuals



# "A lot of parents don't understand what's happening in chat rooms and on social networking sites."

- Mike Cox, Michigan Attorney General

also want to do whatever we can to help employees once they leave for home. This is information every parent should have."

Ford Parenting Network Chair and IT Manager Judy Asher agrees, saying that her group jumped at the chance to provide this service to employees, and hopes to host an encore presentation on a larger scale sometime soon.

"I know from watching my own 8- and 11-year-old children that I need to evolve my knowledge of the Internet as they evolve their experiences online," Asher says, noting that very young kids are entering the World Wide Web through toys such as Webkinz – stuffed animals that come with codes to unlock virtual personas on an extraordinarily kid-friendly Web site loaded with games and activities.

"In Webkinz World, you can play games with 'friends' who are complete strangers," says Asher, who adds that although identities are protected there, she fears children could

be lulled into a false sense of security and not be on guard later when they then meet potentially nefarious "friends" in other cyber locations. "Parents have to constantly be monitoring their children's progression and talking with their kids about this."

Employees who weren't able to attend the FPN session can visit the official Web site of the Michigan attorney general's office (www. michigan.gov/ag) for tips and downloadable handouts, as well as a press release about Michigan's participation in a multi-state agreement with MySpace that will result in new safety measures designed to protect children on the social network site.

"We've signed up 185 school districts for Michigan CSI, but Ford is the first company to host an event," says Cox, a lifelong Ford customer who currently drives a Fusion. "I'm really happy about Ford getting involved in fighting Internet predators. Parents are their children's best defense."

#### **10 Internet Safety Tips**

- Create clear and simple ground rules for children to follow.
- Place a computer with Internet access in a location that is visible to other members of the family (not in a child's bedroom).
- Explain to your children that they should never give out identifying information

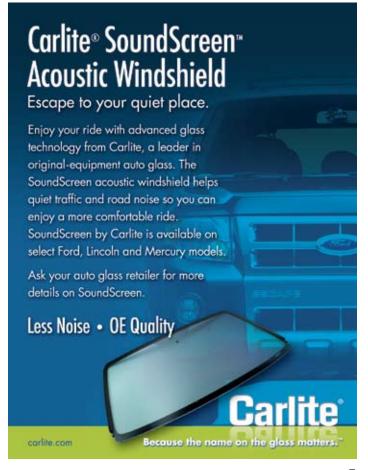
   name, home address, school name, or telephone number – in a public forum such as a chat room or a bulletin board (newsgroup) or to people they do not know.
- Discuss the importance of telling you or a trusted adult if something ever makes your child or teen feel scared, uncomfortable or confused while online.
- Get to know the Internet and any services your children use.
- 6. Become familiar with blocking and monitoring programs.
- Never allow a child to arrange a face-to-face meeting with another computer user without parental permission or accompaniment.
- Tell your children never to respond to messages or bulletin board items that are suggestive, obscene, belligerent, threatening or make them feel uncomfortable.
- 9. Report messages that present a danger to local law enforcement.
- Remind your children that people online may not (and likely are not) who they seem and that everything people say online may not be true.

Source: Michigan Attorney General's Office

- or companies that want to debit funds directly from your checking account. "It's OK to do this with a major provider like the electric company," he notes, "but you shouldn't trust that everyone else has your best interests at heart."
- Consider dedicating one credit card to online purchases. It's easier to track and verify money you've spent online if your credit card statement lists just those transactions.
- Be diligent about reviewing bank statements. If the cat's already out of the bag and you've provided your checking account number in the past, stay on top of each withdrawal so you'll know as soon as possible when something is amiss.
- Think twice about what you post online. "Be aware that people around the world can access pictures and information on MySpace or Facebook," Roundy says. "Employers are going to these sites to research job candidates, for example. You want to be very careful about the reputation you're setting up for yourself."

Roundy also suggests checking out the following online resources:

- OnGuard Online (onguardonline.gov) Provides practical tips from the federal government and technology industry to help consumers guard against Internet fraud, secure their computers and protect personal information.
- Stay Safe Online (www.staysafeonline.org) Sponsored by the National Cyber Security Alliance to promote smart choices online.
- The NetSmartz Workshop (www.netsmartz.org) –
  Educational resource material for children, teens and their
  parents.



### Award-winning Super Duty boosts strength, durability

*MotorWeek*, which is broadcast weekly on PBS, recently announced its 2008 Drivers' Choice Awards, and the 2008 Ford Super Duty pickup took top honors in its segment.

A key part of the reason: The chassis for each model in the lineup is custom-tailored to provide the utmost strength, flexibility and durability.

Further, Ford continues to develop new features that make its high-quality trucks even better. For example, all 2008 Super Duty pickups, including the F-450, feature a new rear leaf-spring suspension design that provides the same high levels of capability with increased levels of refinement. The new springs are 8 inches longer than on the previous trucks and attach farther forward on the frame, contributing to the confident feel of Ford's Super Duty trucks.

The new design reduces power hop and brake hop, and it enables more "wind-up" stiffness without having a negative effect on a truck's ride. The suspension also uses stiffer bushings all the way around, with a redesigned rear linkage. As an added benefit, the rear suspension was specifically designed to keep the rear end lower to optimize the towing of taller gooseneck and fifth-wheel trailers.

"The longer leaf springs, stiffer bushings and position of the front attachment give the vehicle more balance, more control," said Dan Gompper, supervisor, Vehicle Dynamics. "Super Duty's road manners make it a pleasure to drive when towing for long distances."

The redesigned leaf springs and stiffer bushings also help to improve front and rear roll control during cornering, keeping the suspension underneath the truck relative to the frame.

"By controlling that initial reaction, you reduce the chance that the body will build momentum sideways relative to the axle," said Gompper. "The axle has grip, the body is stuck firmly to the axle, and they both carve smoothly around the turn."

Other enhancements for 2008 include reinforcements added to several areas to increase cargo and towing capacity. These include relatively massive 27-mm enclosed tow hooks, "the strongest tow hooks in the industry," which are designed to support one-and-a-half times a truck's gross vehicle weight rating (GVWR) – up to 33,000 pounds.



The all-new 2008 Ford F-450 – shown here undergoing testing at the Michigan Proving Ground – can tow up to 24,500 pounds, 8,000 pounds more than its closest competitor.

The 2008 Super Duty also is the only vehicle in its class to utilize a sophisticated type of patented engine torque traction control that's available on all models. While most competitors use brakes to manage torque, Super Duty's state-of-the-art diesel uses engine torque to manage wheel spin. Super Duty's system computes wheel speed from the differential and reduces torque to match the best traction to the wheels for that terrain. The system works in 4x2 only and can be shut off when not needed.

"Engine torque traction control is much more precise that brakecontrolled traction control," said Gompper, "because it drives you to the best friction point for tires to surface."

The Super Duty is the first truck in the industry to use a highstrength steel front body structure, too. The patented structure not only serves to create a very rigid and strong foundation, the system's modular construction eases assembly and delivers a more dimensionally accurate truck, increasing quality and providing a more precise fit and finish.

What's most impressive is that the body engineering team had to create an entirely new set of development procedures, as they had nothing in the industry to benchmark. Much of the initial development work was done on the computer using a computer-aided drafting (CAD) program, producing some very tough prototypes.

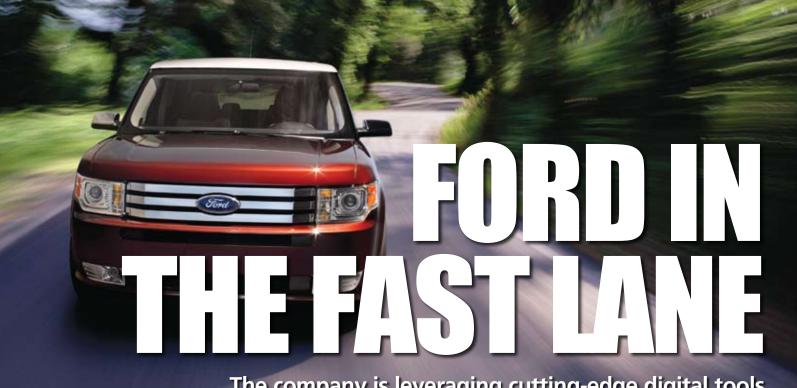
"We got a letter from the guys at our proving grounds, commending us on the design of the truck," said Dragan Stojkovik, engineer, Body Structures. "They were impressed, because they couldn't break it."



#### Other Super Duty chassis benefits include:

- Every Super Duty frame is E-coated for improved corrosion protection.
- The new, fully boxed front section has been optimized to meet government standards for vehicle compatibility without the need for an added blocker beam.
- A Ford-only front frame horn design lowers the frame by 7 inches, improving vehicle cooling and providing a solid footing for the hydroformed body structure.
- Robust, 6.7-mm steel outer rails (8.1-mm on the chassis cabs) utilize

- cross members that have been modified to help with powertrain noise isolation.
- Super Duty's cross members are the only ones in the industry that are both riveted and welded for added strength.
- A new steering damper has been introduced to reduce vibration for a confident feel.
- All F-250 and 350 4x4 pickups utilize a monobeam, coil-spring front suspension geometry that provides better steering feel and response, enables class-leading braking and dramatically reduces the trucks' turning diameters.



The company is leveraging cutting-edge digital tools to accelerate product development

#### BY KRISTOPHER SPENCER

FORD World

ccelerating the development of new products that customers want and value is an essential part of Ford Motor Company's plan to be profitable in

North America by 2009. Driving this goal is the Global Product Development System (GPDS), which has already accelerated Ford's time to market by 25 to 50 percent in the past few years.

"Product development at Ford is anywhere from 8 to 14 months faster than it was as recently as 2004," said Derrick Kuzak, Ford group vice president, Global Product Development. "We're really competitive, thanks in part to our digital capability."

Computer-aided design and engineering (CAD/CAE) have been

industry staples for many years. However, the prevalence of advanced digital tools has grown to encompass virtually every aspect of product development – ranging from computerized concept drawings to high-definition 3D market research clinics to virtual manufacturing feasibility studies. As a result, vehicle programs as recent as the Ford Flex have been developed almost exclusively in the digital realm, saving the company a significant amount of time and money.

"Flex was one of the first Ford vehicle programs to use digital design tools from the start," said Jeff Nowak, chief designer, Studio 2000X, which is Product Development's digital design support team. "It really is a watershed program in that respect, but there is still room for improvement

in our overall digital process. Our next couple of vehicle programs will take digital development to an even higher level of efficiency and acceleration."

#### **Becoming Flex-ible**

Vehicle programs typically start in one of two ways. Either a product direction letter (PDL) is drafted, describing a type of vehicle to be developed (e.g., a seven-passenger people mover on a car platform), or a conceptual sketch leads to a PDL. The Flex started with a sketch.

In the past, sketches were done by hand on paper. While that basic medium is still employed in a limited capacity, sketches are now done on computer in an illustration program. When the Flex design originated as a people mover known as the "Hamptons," Ford designers were able to make numerous quick digital changes to its basic "two-box" proportions without having to constantly start

from scratch.

Once the digital sketches generated sufficient internal interest, the design team developed more detailed views of the vehicle's front, rear and side, while also determining package points such as the position of passengers, bumpers and wheels. After getting additional input from Ford designers in California, the Hamptons was transformed into the 2005 Fairlane show car that previewed Ford's three-bar horizontal grille design.

"We knew the vehicle's design was really different and something that

"Our next couple of vehicle programs will take digital development to an even higher level of efficiency and acceleration."

– Jeff Nowak, chief designer, Ford's Studio 2000X

Digital Design on page 10



### THE DEVELOPMENT OF THE FORD FLEX

The Ford Flex was one of the first Ford vehicles to be designed digitally from the ground up — starting with computer sketches. Approximately 80 percent of the vehicle's development was done on computer, but clay models were still made at critical junctures to validate the digital designs. What started as the "Hamptons" concept of the classic wagon took on the two-box proportions of an SUV and became the 2005 Fairlane show car, which, in turn, evolved into the 2009 Ford Flex that launches this spring. Here's a basic tour through the Flex's design evolution.



#### **EARLY SKETCH**

This digital sketch, which is based on the original "Hamptons" people mover concept, established the two-box proportions and "greenhouse" of the Ford Flex with a roof separated from the main body by black pillars.

"For our new people mover, we wanted to get away from the one-box proportions typical of a minivan," said Richard Gresens, chief designer, Ford Flex. "There is a stigma attached to the minivan look. So, we wanted a two-box look of an SUV, which people still like."



#### **EARLY GLAMOUR CLAY**

This painted clay model, with plexiglass for windows, was made early in the design process to validate the digital work done up to that point. Noteworthy differences between it and the earlier sketch are the addition of character grooves on the doors as well as the integrated front and rear bumpers.

"The original sketch had pronounced, almost retrostyle bumpers, but we wanted something more integrated for a more contemporary look," Gresens explained.



#### **FAIRLANE SHOW CAR**

For the 2005 Fairlane show car, Ford's design studio in California added the three-bar grille, a design cue that Ford was developing for multiple vehicles at the time. The three-bar split in the headlamp and taillamp helped to set the design direction for the Flex. The show car also added "suicide doors."

"We didn't carry over the suicide doors on the Flex, because they can be impractical and present some manufacturing challenges," Gresens said. He added that the proximity of the rear door handle suggested the sliding door of a minivan, which was a design cue the team wanted to avoid.



#### MID-PERIOD DIGITAL RENDERING

Unlike earlier versions of the Flex, this mid-period digital rendering adds a distinctive shoulder to the doors to accommodate the handle mechanism as well as the windows.

"Originally, the car had slab sides, but the shoulder gave it a stronger look and it met our needs for manufacturing feasibility," Gresens said.



#### **FINAL GLAMOUR CLAY**

Another post-show car design change was the lengthening of the Flex's wheelbase. Such changes were completed digitally prior to the making of this final "glamour clay."

"Without digital tools, we would have spent a lot of time redoing a physical armature for a new clay model," Gresens said. "Making the changes digitally saves a tremendous amount of time and money."

#### **FLEX DATA**

Once a digital design reaches a stage known as Surface Transfer (ST), the data is released by Design for the Engineering team to use in preparation for production. Multiple colors are used to separate the individual surfaces. "ST is a magical date for design, because we're saying that the surface is essentially perfect," said Jeff Nowak, chief designer, Studio 2000X. "That's when we start digital verification. It's a formalized review process looking at fit and finish and overall surface quality. There's typically minimal design and feasibility adjustments made before final release to manufacturing."

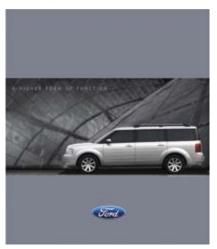
#### Digital Design continued from page 7

would set Ford apart," said Richard Gresens, chief designer, Ford Flex. "What made the program unique compared to others is that we kept most of the design development in the digital realm."

Before becoming Ford Flex, which goes into production this May, the concept called Fairlane went through a series of iterations, involving such things as lengthening and shortening its wheelbase. On past programs, making these types of changes meant expensive, time-consuming alterations or reconstructions of physical prototypes. But design changes for the Flex were made digitally – in hours rather than weeks.

"Everything went relatively smoothly and we were disciplined about it," Gresens said. "If you do a lot of back and forth between digital and physical models you can lose a lot of time. It really helped us to focus on the digital."

After the Fairlane show car, the design team used 3D visualization software to merge exterior and interior files to create a stunning photorealistic image of the virtual vehicle shown in front of



Photorealistic digital images were used to create fake ads that built interest in the Flex internally.

Ford Field stadium in Detroit. They also created fake magazine advertisements featuring the virtual vehicle. Gresens said the images helped to win over colleagues who were initially skeptical of the vehicle's appeal.

"By showing photorealistic images of the Fairlane/Flex in real-

world contexts, we were able to 'sell' the concept as a viable product," Gresens said. "In the past we couldn't do that. It really helped us expedite the program."

The Flex was the first Ford program to use animated, photorealistic models instead of physical properties in market research clinics to gauge consumer interest in the vehicle. Randall Janisch, manager, Ford Marketing and Sales Research, said that virtual 3D models are much easier and less expensive to transport to clinics than physical properties, and participants often cannot distinguish between what is real and what is animated.

Ford's 3D models are typically presented alongside de-badged competitive models for the sake of comparison, both in-house and at market research clinics. These high-resolution images are based on full-surface digital scans that capture tens of millions of surface data points. But what used to cost as much as U.S. \$50,000 per high-resolution vehicle scan and take a few weeks to obtain from an outside vendor is now

done for a fraction of the price in a matter of hours by Ford's Design Measurements team.

"We invented the process to replicate these models very cheaply

# Ford milling machine is biggest in industry

#### **BY KRISTOPHER SPENCER**

FORD World

It's been called a "gentle giant." Towering more than two-and-a-half stories with the footprint of an average two-bedroom house, Ford Motor Company's new vehicle-modeling mill is the largest of its kind in the world. More important, this precision tool is part of a broad effort to accelerate product development while leveraging the company's digital design capability.

Ford recently completed installation of its new computer-aided milling equipment at its Product Development Center (PDC) in Dearborn. The machine can precisely cut a foam model as large as a Ford F-Series Super Duty or as small as a radio knob four times faster than ever before.

"When we need a physical model to check volume and proportions, this equipment enables us to do it quickly and inexpensively," said Peter Horbury, executive director, Design, The Americas. "As a result we can do a lot more model sculpting in a shorter amount of time, which is essential in meeting our accelerated product development plans."

Scott Hunter, manager, Design Modeling, Milling and Fabrication, initiated this comprehensive project in early 2006. He and his team met weekly to coordinate costs and resource requirements supporting this monumental project installation.



The milling machine allows Ford to do more model sculpting in less time.

Installation of Ford's Italian-made, 85-ton milling equipment started in April 2007 with the laying of a 5-foot deep foundation using 200 cubic yards of concrete. The machine is welded to a ton of steel embedded in the concrete. In addition, the two-story roof was raised another half story to accommodate the high-tech behemoth.

"Installing this equipment was like building a house, but a lot more technical," said John Consiglio, manager, Design Milling.

The mill's platform is insulated from the rest of PDC to prevent vibration problems that can occur with sudden stops and starts. Insulating its inertial force was no small concern, because the machine's glycol-cooled linear-drive motors power a magnetic



An early digital rendering of the Flex by designer Shawn Wehrly

and very fast," said Brian Bowman, manager, Ford Design Milling and Measurement. "It has given Ford a competitive advantage in the industry."

While digital tools offer the advantages of speed and reduced cost over working in foam, clay or other real materials, virtual models are not intended to completely replace physical prototypes.

Peter Horbury, executive director, Design, The Americas, maintains that physical prototypes are still needed to validate digital designs.

"Thanks to advances in digital design, we don't need to build a physical model until later in the PD process, and that accelerates product development," Horbury said. "The potential cost savings are enormous."

Development of the Flex was roughly 80 percent digital. As more and more of Ford's design and engineering personnel are trained to use the technology, vehicle programs will go 90 percent digital and beyond, Horbury added.

#### **Digital Disciplines**

Digital tools have transformed how Ford vehicles are designed and engineered. Computer-aided processes have streamlined vehicle development, improved product quality and verified manufacturing feasibility while speeding time to market.

"It's not just about the tools," said Kuzak. "It's how you apply the tools and how well you use them, pulling it together as part of a disciplined development process. That's why we've worked so hard to integrate our digital tool set within GPDS."

While GPDS greatly cuts time to market, it requires that most engineering decisions be made early in the development process. But it also enables increased product refinement and packaging alternatives. GPDS is applied to the development of parts, as well. It enables collaboration between PD teams on 3D designs and systematic parts configuration, and ensures 100 percent parts compliance.

Digital tools and processes thus allow the current status of every part to be viewed instantaneously and verified against an exhaustive

propulsion system similar to the kind used on the high-speed "bullet trains" of Japan.

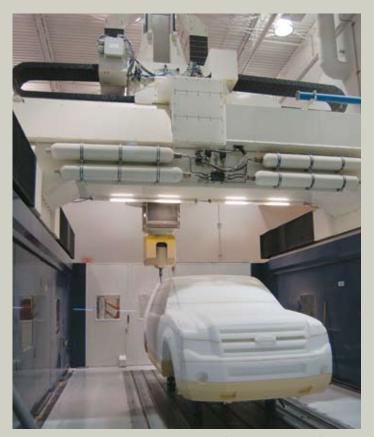
In operation, a vertical arm that controls an adjustable, state-of-the-art cutting tool descends from a 13-ton horizontal beam that rides back and forth on top of the steel rails of the mill. The cutter tracks along the surface of the foam model at up to 40 meters per minute, spinning at up to 24,000 rpm – four times the speed of the 19-year-old milling equipment the new machine replaced.

By following cutter paths generated from surface data provided by vehicle designers, the mill can sculpt a foam surface that is as soft as polyurethane or as hard as high-density synthetic wood to within a thousandth of an inch. Moreover, the machine can precisely undercut the foam to accommodate a layer of clay; its ability to also sculpt clay is being assessed. The mill can accommodate a foam model as big as 23 feet long, 13 feet wide and 8 feet tall – such as the F-350 Super Duty 4WD Crew Cab Long Bed pickup.

"Basically, we cut big blocks of foam by starting with tools as big as 32 millimeters and gradually transition to tools as small as 0.5 millimeter," explained Jim DeBene, senior specialist, Design Milling Numerical Control. "We can handle everything from full-scale vehicles to wheels to bezels to knobs."

The equipment was designed with operator safety in mind. No one is allowed inside the machine while it's in operation and its doors are electrically locked before the equipment can be operated.

"The safety of the equipment certainly is important," said Rodney Ackling, specialist A, Design Milling Numerical Control. "But its precision and speed give us the competitive edge we've needed for a long time."



Ford's new milling machine can create full size models of vehicles as large as the F-350 Super Duty pickup.

part-to-part requirements data set for every conceivable interface. This lets potential interferences, misalignments or substandard clearances to be quickly identified and resolved. The new process minimizes future design churn caused by incompatibilities that would not have been previously found until physical vehicle builds began.

This innovative process, known as the Digital Pre-Assembly (DPA) process, has been integrated in the last three years, and numerous programs including the all-new Ford Flex

have benefited. DPA processes are applied to static and dynamic geometric verification, as well as manufacturing and service simulations.

"Digital tools have made vehicle configuration easier than ever before, because it used to be done manually. It wasn't user friendly, and it took a lot more time and energy," said Ryan Hazel, manager, PD Chassis, Powertrain and Climate Control Systems CAD. "We didn't manage configuration well before, because there wasn't a method as accurate as what we use now."

There are many more buildable combinations that can now be analyzed because of digital tools, allowing many more virtual reviews of parts in design context, speeding the development process and reducing potential downstream issues.

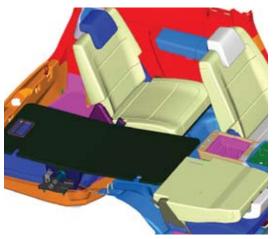
Digital Vehicle Integration Engineering, a new functional area formed as a result of GPDS, has developed over the last three years a rigorous process of verification of all part-to-part requirements in context. It's done several times during the critical design development phase before the design is finalized and released for tooling production.

"The new process is applied the same way, benefiting every future vehicle Ford plans to make, whether it's a car, truck or crossover," said Irene Smyk, PD manager, Digital Innovation. "By the time we get to the prototype and launch phases, we will have significantly reduced engineering changes caused by part-to-part incompatibilities, manufacturing and service concerns."

The Virtual Build process, along with DPA, also significantly contributes to quality. Among the first vehicles on which Virtual Build was used were the Ford Fusion, Lincoln MKZ and Mercury Milan. The results: MKZ and Milan led their segments in the 2007



An early clay model of the Flex





Surface Transfer data of the Flex interior (L) was used to help digitally verify operation of the production vehicle's folding seats, helping ensure manufacturing feasibility and superior fit and finish.

J.D. Power and Associates Initial Quality Study, with the Fusion placing third.

On four new programs with physical prototype builds in 2007, including the Flex and Lincoln MKS, there was an 81 percent improvement compared to previous programs that had not benefited from the new processes, Smyk said.

The Flex was the first Ford GPDS program to incorporate the formal DPA process. Elimination of geometric incompatibilities will lead to reduction of manufacturing, warranty, service and cost issues that can also improve customer satisfaction.

Stephen Jacobsen, engineer and block leader, Parts Development, supported the prototype physical builds at Ford's Pilot Plant in Allen Park, Mich., in mid-2007, analyzing geometric compatibility issues for the four programs.

"We found very few issues, which is very rare," Jacobsen said of the Flex, reporting similar results for the Lincoln MKS and other builds. "Parts are more likely to work perfectly in the real world if they're proven to work perfectly in the digital world."

The Virtual Vehicle Verification team used a virtual verification tool to confirm that the parts were 100 percent compliant in the digital world, which is essential in determining the feasibility of manufacturing assembly, as well as service disassembly and reassembly.

In the digital world of vehicle development, the lessons learned on previous programs create preventative actions and new requirements that can be integrated into the DPA process.

"We are constantly updating the DPA closed-loop process to make each program better than the last," Smyk said.

Ford is continuously developing and deploying improved digital processes, design templates and verification methods to drive further cycle-time efficiencies while reducing post-design release issues.

The digital development process is a major enabler in further optimizing and accelerating the product creation process including platform commonality, reuse and complexity reduction, said Bob Trecapelli, director, Global Digital Innovation.

"We've been able to produce the entire virtual vehicle much quicker than before with greater engineering completeness and compatibility," Trecapelli said. "The digital development process is a key element of GPDS and is a major enabler to the entire product creation process."

# New 'powerwall' supports global product development

#### BY KRISTOPHER SPENCER

**FORD World** 

You haven't seen vehicle design until you've seen it on a "powerwall."

What sounds like an extreme sport maneuver or a video-game challenge actually is helping accelerate the globalization of product development and market research at Ford Motor Company.

Ford is completing installation of several state-of-the-art digital powerwall studios at its Product Development Center (PDC) in Dearborn to help get products to market faster. Powerwalls use high-definition (HD) rear-screen projection to enable review and refinement of full-scale computer-rendered vehicle designs prior to fabricating physical properties in foam, clay and fiberglass.

In addition, Ford Market Research uses mobile powerwall technology to "test" vehicle designs, including potential global products, with consumers around the world. More than ever before, consumer insights drive vehicle design.

"This technology is an integral daily working tool that enables us to bring more of our vehicle design processes into the digital environment," said Peter Horbury, executive director, Design, The Americas. "It expands our capability and has the potential to save a significant amount of time and money as we continue to globalize product development."

The centerpiece of Ford's new powerwall facilities is the Electronic Design Presentation Room (EDPR) at PDC, which features a 60-foot-wide wall that accommodates three 20-foot-wide projections simultaneously. It enables the review of Ford and competitor model exteriors and interiors through the use of highly detailed graphic-rendering technology that is four times sharper than standard Blu-ray HD. Full-scale, static and animated imagery come to life in much greater detail than normally seen on a computer screen.

"The facility provides an effective forum for group discussions and executive reviews that are difficult to do over a 20-inch computer monitor," said Jeff Nowak, chief designer, Ford Studio 2000X. "It facilitates the social component of the design process."

The technology also has made the review process more compelling and detail-oriented, Nowak said. The photorealistic computer-rendered images show driving dynamics in realistic lighting, from any angle and in lifelike detail. Colors and reflective surface textures in vehicle interiors can be changed with a click. When a graphic of the leather on heated seats is shown on the powerwall, it appears realistically perforated. And exterior views are equally eye-popping, with close-ups of metal-flecked paint reflecting a surrounding cityscape.

"The EDPR is the pinnacle of powerwall technology," Nowak said, adding that Ford's facility is believed to be the most advanced in the industry.

In addition to the EDPR, by year's end Ford will complete PDC's Advanced Visualization Center (AVC), a group of powerwall labs that will enable multiple design teams to use the technology simultaneously. While the EDPR can serve as both a working-level digital studio as well as a management presentation space, the AVC will enable teams and individuals to undertake what Nowak calls "nitty-gritty feasibility studies" and component design reviews throughout the PD process.

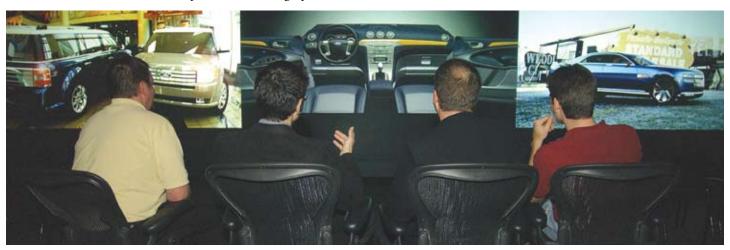
Ford of Europe also has powerwall facilities at its PD facilities in Dunton, England, and Cologne, Germany, but it doesn't stop there. The same basic technology can be used worldwide for market research clinics.

"You can take powerwall presentations around the world, knowing that everyone will see the same thing," said Randall Janisch, research manager, Ford Marketing and Sales. "We're better able to control what clinic respondents see and we get more data because more people are able to participate in the allotted time."

Janisch added that powerwall animations are much easier and less expensive to transport than physical properties. Moreover, the clinic participants have responded positively to the presentations.

"When they see these images they can't tell what's real and what's animated," said Janisch.

"Thanks to advances in digital design we don't need to build a physical model until later in the PD process, which accelerates product development. And the potential cost savings are enormous," Horbury said. "We've gone from 60 to 70 to 80 percent digital, such as on the Ford Flex. As we get more and more of our people capable of using the technology, we'll get to 90 percent and beyond."



Ford's Electronic Design Presentation room can show three 20-foot-wide digital projections at once.

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### FORD MOTOR COMPANY GLOBAL NOTES



Executive Chairman Bill Ford (L) learns about quality processes during a past trip to FMCSA, which is investing more than \$200 million in its production facilities.

#### Ford of Southern Africa invests U.S. \$200 million

Ford Motor Company of Southern Africa (FMCSA) recently announced plans to invest more than ZAR1.5 billion (approx. U.S. \$200 million) to expand operations for the production of Ford's nextgeneration compact pickup and Puma diesel engine. The investment will commence in 2009 and be split between the Ford assembly plant in Silverton, Pretoria, and its engine facility in Struandale, Port Elizabeth. Production of the new diesel engine is scheduled to begin in 2010, followed by production of the new pickup in 2011. The investment and new manufacturing contract will transform FMCSA's current production landscape to enhance South Africa's significance as a strategic export base for vehicles, engines and components for Ford Motor Company. The investment will increase total annual capacity at Silverton to 110,000 units, with approximately three-quarters of the vehicles being produced for export, primarily to markets in Africa and Europe. The Struandale Plant will increase annual production for its next-generation, turbocharged common-rail Puma diesel engine and components to approximately 180,000 units, with the majority being exported.



Hydropower allows Volvo Cars to greatly reduce the use of oil in its production facilities.

#### Volvo uses hydropower for Swedish, Belgian facilities

A systematic drive for green electricity is the latest measure adopted by Volvo Cars on its path to reach climate-neutral production in Europe. The company now relies solely on hydropower for its facilities in Sweden and Belgium. "We aim to use renewable energy to the greatest possible extent, and hydropower is the best alternative that our suppliers can offer at present," says Magnus Hellsten, senior vice president, Manufacturing, Volvo Cars. Volvo Cars' focus on energy sources other than oil has been going on for more than 25 years. In 1982, the company took the first step by using residual heat from nearby refineries to heat its factory in Torslanda. "We have made so much progress that today we are virtually independent of oil for our energy supply," says Mihkel Laks, director, Environmental Protection, Volvo Cars.



Mikko Hirvonen and Jarmo Lehtinen on their way to a secondplace finish in the WRC opener.

#### Ford WRC team takes second at Monte Carlo

BP Ford Abu Dhabi World Rally Team driver Mikko Hirvonen produced his best performance in the legendary Rallye Monte Carlo, finishing second in his Ford Focus RS World Rally Car. Teammate Jari-Matti Latvala finished 12th in another Focus RS after a troubled rally, with Abu Dhabi's Khalid Al Qassimi taking 16th in a third BP Ford Abu Dhabi car. Five Fords finished in the top 10, with Focus RS cars also claiming sixth, ninth and 10th. "Second is a great result for me and a perfect start to the season," said Hirvonen. "I've never had a good rally here so to take a podium is fantastic, and it almost feels as good as a win." Mark Deans, motorsports director, Ford of Europe, added: "To finish the most famous rally in the championship with five cars in the top-10 leaderboard was a great result for Ford. It sets the level that we must aspire to for the rest of the season, and I'm confident we can live up to that."



The MAZDA2 three-door hatchback will premiere at the Geneva Auto Show in March.

#### New MAZDA2 three-door hatchback to debut in Geneva

The popular MAZDA2 model range will soon add another product, the line's first three-door hatchback. Bringing with it all the attributes of the five-door hatch, the three-door model is even sportier and more affordable. Mazda will showcase the car at the 78th annual Geneva International Motor Show, to be held March 4-16 in Switzerland. The new MAZDA2 three-door hatchback is designed to attract new customers to further Mazda's continued growth in the European market. It offers the same lively and responsive MZR 1.3- and 1.5-liter gasoline powertrains, and the same MZ-CD 1.4-liter common-rail turbodiesel, as the five-door hatchback. These engines achieve high fuel efficiency along with particularly low CO2 emissions. Launched in September 2007 as Mazda's

first new-generation Zoom-Zoom vehicle to evolve to the next level, the MAZDA2 was awarded five stars for adult occupant protection on Euro-NCAP crash testing and has won more than 20 automotive awards.



#### Ford Motor China REC named CCTV Employer of the Year

Ford Motor China Research & Engineering Center (REC) has been named 2007 CCTV Employer of the Year in Nanjing, topping a list of 10 finalists drawn from among 60 Chinese and international companies. (CCTV is China's largest national television network.) This year marks the first time Ford Motor China's REC topped the annual survey, which began in 2005. The CCTV Employer

of the Year survey identifies organizations that best align their business strategies with a creative and dynamic learning environment to foster business growth and employee development. Business executives, employees of the candidate companies, and an advisory panel of government officials, media and key opinion leaders were among those surveyed.

### **CALENDAR**

#### **FEBRUARY**

#### The 2nd Annual 20 Minute Treadmill Challenge (Dearborn, Mich.)

The Dearborn UAW/Ford Fitness Center and Ford Runners Club want to encourage a new year of good health by bringing you the 20 Minute Treadmill Challenge. This program is open to both walkers and runners. Walkers are expected to maintain treadmill speeds above 3 mph; runners are expected to maintain treadmill speeds between 5-10 mph. The challenge starts Monday, Feb. 4. If you would like to participate, please sign up at the Dearborn Fitness Center. If you would like more information or if you do not work in the Dearborn area and would like to participate, please contact Ford Runners Club President Jeff Roggenbuck (JROGGENB@ford.com).

Special Tire Discounts for Employees March Ford Customer Service Division is proud to offer Ford employees a special first quarter discount on the most popular tires Ford and Lincoln Mercury dealers sell. You get a great deal on tires during the winter when you need all the grip you can get. This discount is in addition to any other offer or rebate available at the dealership. It's easy to take advantage of the offer: 1. Call Tire Program Headquarters at 1-888-353-3251 to receive your employee approval code. 2. Take that code to your participating local Ford or Lincoln Mercury dealership and buy your tires by March 31, 2008. You will receive 20 percent off the MSRP of Goodyear premium tires (Assurance ComforTred, Assurance TripleTred, Eagle ResponsEdge, Eagle F1 All Season, Fortera TripleTred, Fortera Silent Armor and Wrangler Silent Armor) and 15 percent off the MSRP of all Michelin/BFGoodrich/Uniroyal, Continental/General and Yokohama tires. (Employee must receive approval code from Tire HQ by calling 1-888-353-3251 before purchasing tires. Not valid on prior purchases.)

2008 UAW/Ford March of Dimes Campaign Kick-Off (North America)

Please support the 2008 March of Dimes Campaign that kicks off this month.



The event will last through May 1. There will be several opportunities for all to get involved in the campaign through various local fund raisers and walks. For more information click to www.marchofdimes.com.

Retirement Planning and Investing Seminar (Dearborn, Mich.)

The Ford Motor Company Real Estate and Investment Club presents a seminar that will provide information about strategies for managing your 401(k) and IRAs, maximizing investment returns with less risk, real estate vs. stock market investing, current investment opportunities and risks, outlook for the real estate market and a financial markets forecast. These sessions are open to all club members, Ford Motor Company employees and retirees, and the general public. Seating is limited. Advanced reservations are required. To reserve seating, call toll-free 1-866-444-6246 or visit www. mainstaycapital.com to register online. The event will be held from 5:30 p.m.-7 p.m. at the M-TEC Auditorium at Henry Ford College.

15 Old Ford Political Action Committee Annual Winter Outing (Rogers City, Mich.) The Old Ford Political Action Committee (OFPAC) formed in 1999 with a membership of Ford Motor Company retirees who once worked in the Dearborn area. The present retiree group is composed of former Finance, Engineering, Product Development, HR and Purchasing employees. OFPAC members are traveling to Rogers City for the annual winter trip on Feb. 15. For additional information, contact Elmer Herschelman at ELMER.HERSCHELMAN@etas.com or call 734-997-9393, ext. 3028.



For the latest industry news, employees should visit AutoBeat Daily via FCN Online at www.fcn.ford.com.

16-17 Ford Model Railroad Club (Saline, Mich.)

Come see the award-winning Ford Model Railroad

Display at the Ann Arbor Model Railroad Club

Maple Rd., Saline, Mich. 48176. Times are Sat.

pm. Admission is \$6 good for both days. Kids

under 10 free with paid adult. Visit the FERA

Web site www.fera.org for more information.

Come see the award-winning Ford Model

Railroad Club's Trainorama Extra, Costick

Community Center (28600 Eleven Mile Rd.,

Farmington Hills, Mich.) from 10:00 a.m. to

under 12 free with a paid adult admission.

the last ten years. More than 2,800 golfers

have participated in this event, averaging

300 plus golfers each year. The Frostbite has

become one of the largest single-day, single-

start golf outings in southeastern Michigan.

This year's event will be held at Fox Hills

Golf & Country Club. For more information

Frostbite Open Charity Golf Event

4:00 p.m. Admission is \$4 for adults. Children

frostBite

Railroad Display at the Redford Model

MARCH

16 Ford Model Railroad Club

(Plymouth, Mich.)

Woodhaven Stamping Plant

Frostbite Open Charity Golf

event has earned over U.S.

\$280,000 for the center over

go to www.frostbiteopen.com.

(Farmington Hills, Mich.)

Show. Located at Saline Middle School, 7190 N.

10:00 am to 4:00 pm and Sun 10:00 am to 3:00

### 2008 Auto Show Lineup

#### **February**

- 11-17 Chicago Int'l Auto Show, Chicago, Ill. www.chicagoautoshow.com
- 15-17 Spokane New Car Show, Spokane, Wash. www.spokaneautoshow.com
- 23-Cleveland Auto Show, Cleveland, Ohio
- March 2 www.clevelandautoshow.com
- Greater Milwaukee Auto Show, Milwaukee, Wis. March 2 www.motortrendautoshows/milwaukee

#### March

- 5-9 Greater Kansas City Int'l. Auto Show. Kansas City, Kan. www.kansascityautoshow.com
- 6-9 Oklahoma City, Int'l. Auto Show, Oklahoma City, Okla. www.okautoshow.org
- First Hawaiian Auto Show, Honolulu, Hawaii www.motortrendautoshows.com/honolulu
- Columbus Int'l. Auto Show, Columbus, Ohio 8-16 www.columbusautoshow.com
- Twin Cities Auto Show, Minneapolis, Minn. www.twincitiesautoshow.com

#### **27th Annual Black History Month Celebration** Cruisin' with FAAN

A celebration of music, Motown and Ford

Join the Ford Employees African Ancestry Network (FAAN) in celebrating Black History Month on Feb. 29, 2008, featuring the legendary Smokey Robinson as the keynote speaker. The event will be held at the Ford Conference and Event Center in Dearborn. A VIP reception will be held from 5 p.m.-6 p.m., followed by the program and awards presentation from 6 p.m.-7:30 p.m., then an afterglow reception from 7:30 p.m. to midnight. General admission tickets, which include the program and afterglow, are U.S. \$45 and can be purchased at http://faan2008bhmcelebration. eventbrite.com/. Those interested in VIP tickets, which are \$150 and include the VIP reception, should contact Alicia Woods at 313.317.9114 or AWOODS52@ford.com.





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\*New families only. Offer good towards the fifth week of paid consecutive enrollment. Family must enroll by December 3I, 2008. Offer cannot be used with any other offer or discount and is subject to center participation, age acceptance, and space availability. Program availability varies by center. See Center Director for additional details.

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<sup>&</sup>lt;sup>1</sup> American Road Services Company, ("AMRO"), a subsidiary of Ford Motor Company ("Ford") is the licensed insurance agency supporting the Ford Motor Company Insurance Services program. Ford Motor Company and Ford Credit are not insurance companies or agents. All insurance is underwritten by the following wholly owned subsidiaries of Ameriprise Financial, Inc.: IDS Property Casualty Insurance Company, or in certain states, Ameriprise Insurance Company, De Pere, WI or other insurance companies for whom Ameriprise Auto & Home Insurance Agency is an agent. In California and Massachusetts, AMRO does business as American Road Insurance Agency. Phone: (866) 673-3673. Ameriprise Auto & Home Insurance's California license number is 0C02678.

<sup>&</sup>lt;sup>2</sup> This data represents information provided by Ford Motor Company Insurance Services program customers who became new auto insurance policyholders and reported annual savings with Ameriprise Auto & Home Insurance between 1/1/06 and 5/31/07. Individual savings and experience may vary based upon a variety of factors including but not limited to driving experience and type of vehicle insured. Discounts and savings vary by state and apply to certain coverages.

<sup>&</sup>lt;sup>3</sup> Program and benefits subject to state availability and apply to covered repairs performed by participating dealerships or repair shops. Where available, the specific features, credits and discounts may vary. Applicants are individually underwritten, and some individuals may not qualify. Certain limitations apply.

<sup>&</sup>lt;sup>4</sup> A.M. Best, the leading independent rater of insurers in the country, has rated the companies within the Ameriprise Auto & Home Insurance group "A" (Excellent) for financial strength, stability and soundness of operating performance.