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## **Revolutionary DeltaWing IndyCar Unveiled in Chicago**

*Radical DeltaWing IndyCar Concept delivers 235 mph laps with half the power and fuel consumption, answering the call for high performance with efficiency and sustainability*

*New design showcases the latest American technology, incorporating future trends in materials, computer modeling, manufacturing techniques, occupant safety, fuels and powertrains*

CHICAGO, Illinois (February 10, 2010) – DeltaWing LLC, of Indianapolis, introduced the future of open wheel racing today at the Chicago Auto Show, aimed at realigning America's premiere racing tradition with current automobile industry and consumer trends. DeltaWing calls on technological innovation to return racing to cutting edge relevance in the search for extreme performance with less environmental and financial resources.

"Today marks a fundamental shift in how race fans and the general public will view all racing cars in the future; this is a game changer" said Dan Partel, Chief Executive Officer of DeltaWing LLC. "This radical prototype takes open wheel racing to a new level from both an engineering standpoint and the overall spectator experience."

The car also marks the next step in the industry's dedication to becoming more environmentally responsible. DeltaWing has identified that this marketplace trend can be applied to the IZOD IndyCar Series and has developed this concept car using the most advanced American technology.

By targeting reduced aerodynamic drag and lighter weight, the DeltaWing design achieves record breaking on track performance with only half the engine power of its recent predecessors. The unique vehicle design provides optimum and consistent distribution of loading for the Firestone Firehawk tires, which are specifically developed for the dynamic characteristics of the DeltaWing racer.

The futuristic form aims to appeal to a younger demographic audience who is increasingly in search of technological innovations to solve the requirement for sustainable personal mobility. DeltaWing LLC will design, engineer and supply a running prototype by August, 2010.

### **Revolutionary design from every angle**

- Ultra narrow front track design saves weight, while fairings for the Firestone tires reduces aerodynamic drag and prevents wheel interlocking
- Delta plan view shape provides undisturbed airflow to the downforce generating ground effect underbody venturi located beneath the car's center of gravity just ahead of the widely spaced rear wheels. Highly efficient downforce with negligible wake ensures minimal loss of aerodynamic performance for a trailing car thus enhancing the on-track overtaking spectacle
- Uncluttered side view with rearwards driver location provides ideal sponsorship positioning and true single-seater appeal. The highly prominent tail fin replaces the conventional inverted aerofoil in order to broaden the yaw stability envelope without inducing aerodynamic drag on straight-aways

“We are confident that this car will outperform the current generation IndyCar and do it in a more environmentally friendly way,” said Partel. “Auto racing has always been a powerful marketing tool for propelling new technology into the hearts and minds of consumers. This new car was specifically designed to be more closely aligned with the new reality of automobiles that are arriving on the road today. Consumers are choosing cars that provide impressive performance capabilities but with greater fuel efficiency. This prototype IndyCar features those same characteristics, making it much more relevant to the public and the auto industry. It is our goal to make participation in the series highly attractive to the automobile manufacturers as well as the fuel, technology, information and entertainment corporate sectors.”

DeltaWing anticipates the final car will weigh a remarkable 50 percent less than the current generation IndyCar and crucially, generate only half of the aerodynamic drag. This combination requires substantially less horsepower to generate speeds of over 235 miles per hour while delivering a 100% improvement in fuel efficiency.

“Our goal is to have our first prototype on the track in August,” said Partel. “We look forward to an exciting development project with the Indy Racing League to ensure that all of their requirements are met for DeltaWing to become the next IZOD IndyCar in 2012.”

“Today, we saw the future of racing unveiled”, said Bill Lafontaine, Chief Marketing Officer. “This revolutionary car and business concept ushers in a new era in racing and reinforces the strong tradition of innovation in open wheel

racing. This initiative reaffirms America's ability to lead in the automotive field. We look forward to the development of the car and our first running prototype."

### **About the DeltaWing IndyCar Prototype**

Initial concept work by Ben Bowlby started with a clean sheet approach and began in January, 2009 at Target Chip Ganassi Racing in Indianapolis. The first prototype car will be powered by a 2.0 liter 4 cylinder turbocharged engine. Final horsepower figures will be based on the car's performance on the track, but by using state-of-the-art computer modeling, it is anticipated that the engine will need to produce approximately 300 horsepower to attain the performance targets and will run over 4,000 miles before requiring a rebuild, a dramatic 100% improvement over the current engine.

"The DeltaWing Concept is more than just a new and exciting racing car; it is about creating a platform that moves racing into the new era of information entertainment", said Bowlby, Designer and Chief Technology Officer. "Once we have successfully production engineered and manufactured the first generation of team cars, those cars will form the beginning of a constant evolution formula. Our intention is to publish the entire design detail via the DeltaWing website where access will be available to everyone and so provide a unique participation opportunity and insight into the engineering world of modern racing cars. Just as we hope to see multiple engine suppliers with different configurations and displacements, we also hope to create a framework that will allow us to see a varied and ever changing grid of racing machines in a sustainable, cost controlled and high value manner. We will be unveiling these plans once the prototype is up and running. As we design the DeltaWing prototype, safety, efficiency, value and cost are our main priorities; the goal is that more teams and drivers will have the opportunity to compete in the IZOD IndyCar series. At this point we anticipate a complete car with engine will sell for \$600,000."

#### **Key Specifications (estimated):**

Weight with driver: 1,030 lbs.

Horsepower: 300 BHP

Wheel base: 125 inches

Front track: 24 inches

Rear track: 70 inches

Aerodynamic drag: Cd 0.24

#### **Key Technical Features**

- Engine and transmission are "non-stressed members" of the chassis structural design which allows teams to install a wide variety of lightweight powertrains
- The prototype will feature a 4 cylinder turbo charged engine that will produce approximately 300 horsepower at 7,000 rpm and weigh only 160lbs fully dressed

- Engine capacity, RPM and configuration freedoms are anticipated given only that the rate of fuel delivery to the engine will be controlled by a specially developed fuel flow rate control unit
- Vehicle weight distribution is necessarily more rearward than traditionally seen with 72.5% of the mass on the larger rear tires
- 80% of the aerodynamic downforce acts on the rear of the car
- Inline traction under acceleration through the rear tires is greatly enhanced by rearward weight and aerodynamic distributions
- Unique amongst today's racing cars 60% of braking force is generated behind the center of gravity giving a dynamically stable response
- Locking propensity of the inside front wheel on corner entry is greatly reduced
- Transmission features 6 speed oval and 5 speed plus reverse road track configurations with sequential paddle shift actuation
- Differential features full torque vectoring active technology with driver control of gain for balance adjustment. "Active stagger" removes the expensive necessity for staggered rear tire diameters for ovals
- Advanced computer modeling of structures, impact energy management, aerodynamics, vehicle dynamics and tires has been used to develop the virtual DeltaWing car
- The car's performance has been simulated on each configuration of race track encountered during the IZOD IndyCar Series Championship
- Modern advanced materials and CNC construction techniques applied to achieve gains in light weight structures and occupant safety
- Driver position, restraint layout and energy absorbency facility designed with the latest data on survival criteria

Visit [www.deltawingracing.com](http://www.deltawingracing.com) for additional information and to follow progress on the design and development of the concept