

Mind For Design

For Ashmore, Developing Cars Is About Being The Best

By Bob Gates



Bruce Ashmore (Joe Fluger Photo)

"The time when we developed the Reynard Indy car," recalls race-car designer Bruce Ashmore, "was a great time because we were at war with Lola. I loved it." That Ashmore speaks in such bellicose terms about Lola Cars, where he spent a rewarding 17 years, and still considers its founder, the legendary Eric Broadley, his mentor, does not suggest a negative opinion of Lola, but rather conveys volumes about his passion for racing and winning.

Whether designing formula cars, sports cars, Indy cars, or now the new USAC Silver Crown cars, auto racing for Ashmore has always been about being the best by beating the best. It's little wonder that a favorite driver of the dozens of world-class racers Ashmore has worked with is Mario Andretti.

"The thing that I loved about Mario is that he never gave up," reflects Ashmore. "He always believed that whatever car we designed could beat the opposition. He'd never say I got to have a different car to win. It was always, 'What can we change to make this better? What would happen if we changed the suspension? The springs? The wheelbase?' He believed he could make that car beat everybody else."



A NEW CHALLENGE: Bruce Ashmore was tapped to design a new car for the USAC Silver Crown Series. (Bruce Ashmore Collection Photo)

The car Andretti was developing with Ashmore proved to be the resurgence of Lola in Indy-car racing. The original design was by an important influence on Ashmore, future Penske car designer Nigel Bennett. When Ashmore became part of Lola's Indy-car effort in 1984, there were only two Lolas in the Indianapolis 500: Andretti's and another for Danny Sullivan.

Ashmore was promoted to Chief Designer for Indy cars in 1987, and by 1990, two-thirds of the Indianapolis starting field were Lolas, including one driven to victory by Arie Luyendyk. Lola also won the 1990 IndyCar championship, and the various evolutions of that car won the championship the next three seasons.

The Ashmore-designed Lola dominated racing at that level and became the gold standard for the modern Indy car.

Despite his current passion, Ashmore did not grow up dreaming about designing and building race cars. He didn't even have an interest in racing. He was raised on a farm near the picturesque English village of Hemingford-Grey and fully intended to convert his passion for making things into designing agricultural equipment, "...you know, things to make the farmer's life easier."

While attending Cambridge Technical University, a chance encounter with a friend took him to a firm in nearby Huntingdon that was looking for an apprentice engineer. When he interviewed at Lola Cars Ltd. in 1976, he was overwhelmed at a shop full of race cars.



IRL WORK: Bruce Ashmore (left) works with four-time Indianapolis 500 winner A.J. Foyt at the track. Ashmore was promoted to Lola's chief designer for Indy cars in 1987. (Bruce Ashmore Collection Photo)

"I thought," says Ashmore, "'Wow!' I couldn't believe I could actually get paid to design them."

The Lola apprenticeship was for five years, which Ashmore served while continuing to attend school. He trained in every department; milling, lathes, welding, fabrication, even clay modeling and style design. When he was finished, he understood every facet of designing and building a race car. After initial success with a series of formula cars and Indy cars, he was named co-chief designer with Mark Williams, another important mentor, and then eventually chief designer. But in mid-1993, he got the opportunity to move to

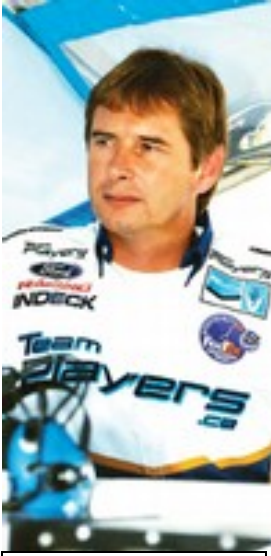
Reynard Motorsports and took it. "I wanted to do one side of the Atlantic or the other," explains Ashmore of the surprising switch, "and I preferred to live in America. I wanted to have a crack at developing a car once it arrived here. At Lola, I was trying to do both. But, Indy-car racing was getting so competitive that you really needed to do only one or the other." Ashmore worked with Chip Ganassi Racing to develop the 1994 Reynard. It was a good car. It won its first race out — Surfer's Paradise — and two more races.

The 1995 car, however, was a better one. Jacques Villeneuve won Indy with one, as did Buddy Lazier in 1996. As Ashmore continued to evolve the original design, Reynard won the initial IRL championship and every CART championship through 2001.

When Reynard's Indy-car business softened, Ashmore created his own concern, Ashmore Enterprises. He served as Team Player's Technical Director, engineering Paul Tracy to a CART championship in 1996, and assisted Team Menard in the IRL, undertaking such endeavors as a full-model test program at Dallara in Italy.

Then in late 2005, Ashmore's design efforts took a decidedly different turn. Chris Paulsen, founder and owner of C&R Racing and a former Indy-car chief mechanic, was familiar with Ashmore's talents. Paulsen had the good sense to hire Ashmore to design the new series of Silver Crown cars he planned to build.

Ashmore relished the challenge. "I've really enjoyed the Silver Crown car," insists Ashmore of what might seem to some to be a 180-degree turn in design standards. "It's opened my eyes on many aspects of design. Besides, it's a race car. It handles and reacts just like any other racing car.



CART MAN:
Bruce Ashmore served as Team Player's Technical Director, where Paul Tracy won the CART championship in 1996. (Bruce Ashmore Collection Photo)

"The USAC formula is tightly regulated," he continues, "but there's still opportunity to make the car better. I applied the same theories I've applied to any race car I've designed. It has to be as light as possible, and then you can add ballast in the most favorable spots. And it has to be as slippery aerodynamically as possible.

"Aerodynamics are always where the biggest gains are made. Of course, you have to work to the very limit of the rules to accomplish that. Things like the roll bars can be made as low and narrow as possible. The side pods can be pushed out to the maximum width in order to fill the gap between the tires. That reduces drag. The shocks can be shortened as much as possible and still maintain necessary travel. That gets them out of the air stream and makes them lighter. It's all in working with the details."

Those details have produced yet another winning car in yet another racing series for Ashmore. He has also worked with C&R Racing to improve the PDI gearbox, since PDI was purchased by C&R. He's smoothed up the shifting and lightened it by as much as 20 pounds in some configurations. He's also designed a new gearbox for NASCAR's Car of Tomorrow. Both Penske and Hendrick Motorsports are already working with that. Ashmore has obviously accomplished much. He's certainly one of the most influential race-car designers of this era. Yet he still relishes the challenges of the future. Off-road racing, of all things, has recently pricked his creative curiosity.

"The Baja is a challenging event," muses Ashmore. "And those cars are really interesting, with a lot of opportunity within their rules for improvements." If the past is any indicator, the world of off-road racing better be prepared for a design shake-up.

NASCAR needed?

At the recent U.S. Grand Prix in Indianapolis, Bruce Ashmore had the opportunity to renew acquaintances with his many friends in F-1. Talking to Team McLaren principal Ron Dennis, subject of NASCAR arose, as Ashmore was explaining his current involvement in the series with the C&R gearbox.

Ashmore could tell by Dennis's facial expressions and body language that he had little regard for the popular American series. Finally Dennis said, "Bruce, there's not a car manufactured in the world that uses a carburetor. How can NASCAR be relevant?" Ashmore continued to defend NASCAR and added, "Because Ron we need many different forms of motorsport."

Dennis glared at him and responded coldly, "We don't need NASCAR," and then turned and walked away.

'Ugly' Silver Crown Cars

When Bruce Ashmore began his career at Lola, part of his apprenticeship involved the rudiments of styling.

"Eric Broadley was always big on how a car looked," explains Ashmore. "He believed a race car should always look good."

So, Ashmore is sensitive to the perception of most fans that the new Silver Crown car is dog ugly.

"I don't know who was responsible — I can guess — but there's no reason the looks of the car had to be forced on us. It didn't need to be done that way, nor should it have been done that way. It could've looked a lot nicer and still kept a lot of the spec components.

"But we have to work within the package given to us. So, I've tried to make the C&R car look as good as possible, worked with the nose, the down tubes and the fit of the panels. USAC is looking at some changes to make it look better, and we've offered our services to help with the appearance."

Maybe there's hope for the ugly duckling yet.

Tube-Frame Indy Cars?

"The tube-frame chassis is the way to go in the future for Indy cars," insists Bruce Ashmore.

"When we made the first carbon--fiber chassis," he explains, "they would break apart and absorb energy away from the driver when they crashed. But as we had bigger and bigger impacts, we made them stronger and stronger. Now, the carbon-fiber chassis we make today are so strong they don't break up.

"So, we've made a very expensive structure out of a material that's in very short supply because it's used extensively in the aircraft industry. And it's so strong it just bounces off the wall.

"Well, a tube frame will do that, and it's much cheaper to make. It's easy to change. Easy to repair. More people could be involved in the manufacture of it. A crushable structure can even be put on the outside of it to absorb energy, somewhat like NASCAR is doing with the Car of Tomorrow.

"The people that get it now, those series will continue to grow. Look at NASCAR, Grand Am, the Silver Crown series, all tube frames and they're growing. Indy-car racing is in a real mess right now, and a lot of the problem is the expense. If Indy cars and Champ cars continue on their present path, they will diminish and gradually shrivel and die.

"I talk to as many people as I can about this, and I think it's going to take people like myself who have been through it all to change things. But we need to get started on it now. "