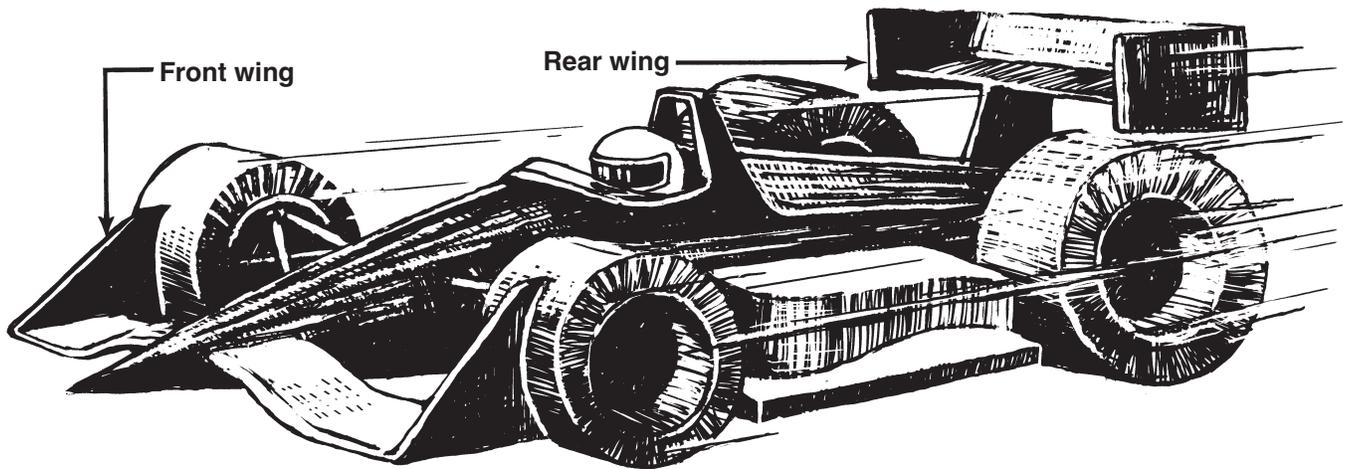


## Reading Selection

## The Race That Wasn't Run

*Indy car*

How did you feel when you were building your vehicle in Lesson 1? Did you have any problems? Were you able to get the wheels to roll? Did the vehicle move like you wanted it to? Maybe you thought, “If only I had more time, I know I could get this to work better.” Often that may be true. But sometimes we just don’t have more time. Sometimes we have to stop working on a project even when we would like to keep improving it. World-famous race car driver Bobby Rahal (say “Ray-hall”) had an experience like that when he designed and built his own “Indy car.”

Indy cars are the sleek, powerful race cars that compete in the Indianapolis 500, among other races. The “Indy 500,” as this 500-mile (805-km) race is called, takes place on Memorial Day in Indianapolis, Indiana, each

year. About half a million people go to see it. The best drivers in the world compete there.

The illustration shows what an Indy car looks like. As you can see, the front end resembles the nose of an airplane. This shape helps increase speed. The car also has “wings” at the front and back to help air flow around it.

Most Indy cars are made by a company in England. Few racers have tried to build their own. So why did Bobby Rahal and his partner, Carl Hogan, want to build an Indy car? The challenge appealed to them and their company, Rahal/Hogan Racing. Bobby Rahal had already won the Indy 500 in 1986. But in 1992, Rahal decided he wanted to race a special car—one that he and his design team would design and build themselves. It would be the only car of its kind in the world.

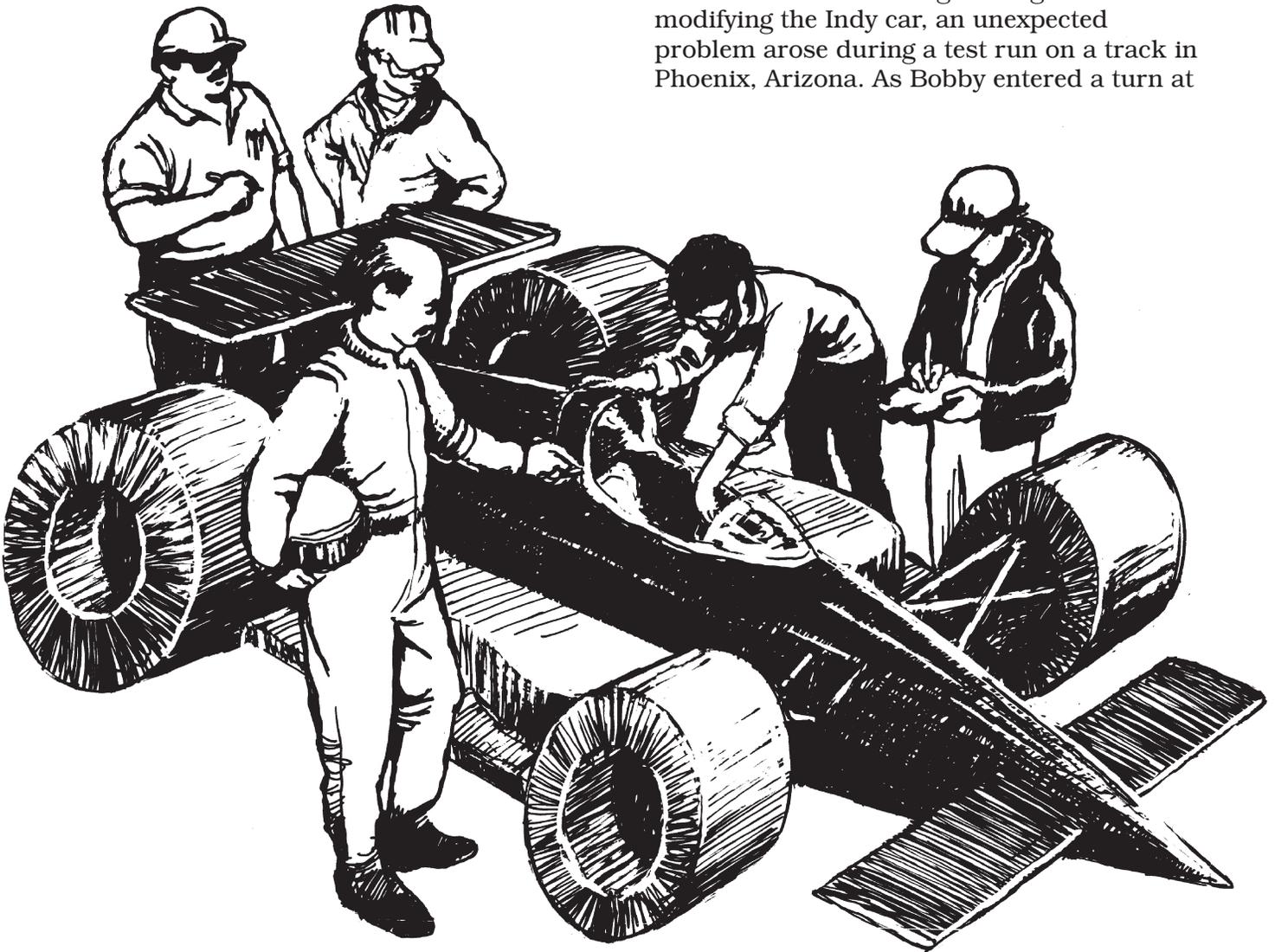
In Lesson 1, you were part of a design team that built a vehicle. Rahal/Hogan Racing had a design team, too. It included engineers, computer specialists, and a race car aerodynamicist, someone who knows how the airflow around a car affects its speed and performance. The team had seven months to design, build, and test the car before the 1993 Indy 500.

To be competitive at the Indy 500, Rahal's car would need to travel about 220 miles (354 km) per hour. How fast is that? If you stood on the sideline of a football field and watched a car drive from one end of the field to the other at

220 miles per hour, you would see only a blur. At that speed, it would take the car 1 second to make the trip down the field.

The Indy 500 is run on an oval-shaped track that has curved corners as well as straightaways. The cars go around this 2½-mile (4-km) track 200 times in the 500-mile race. Since they can go around the track in about a minute's time, they are turning one corner after another within seconds of each other. If a car loses speed on the corners, it can lose the race. Bobby's design team knew they faced a big challenge—to design a car that would move at high speeds and also grip the track around the corners.

After weeks of building, testing, and modifying the Indy car, an unexpected problem arose during a test run on a track in Phoenix, Arizona. As Bobby entered a turn at



about 170 miles (274 km) per hour, the back end of the car swung out and hit the guard wall. The car was not badly damaged, and Bobby was only shaken up. But the problem was serious. The car was unstable in the corners at unpredictable moments. The design team had a new challenge—to find the cause of the problem and fix it.

The design team worked day and night looking for a defective part or a poorly designed feature. They redesigned the rear wing of the car and ran tests of it in a wind tunnel. They revised the front wing. They tried every change they could think of and practically built a new car in the process. Sometimes they seemed to be close to a solution, but then the car would suddenly become unstable again, swinging out toward the wall.

Finally, they had to stop working. It was time for all the drivers who wanted to race in the 1993 Indy 500 to try to qualify. In the qualifying runs, the drivers take turns racing around the track. Only the fastest cars get to compete in the actual race.

Can you imagine how the design team felt as they watched Bobby drive onto the track? How they must have wished they had more time. How they must have hoped everything would go perfectly. How they must have

hoped Bobby would qualify for the Indy 500 and then win it.

But do you know what happened? Everything did not go perfectly. The car became unstable, and it never quite reached the speed needed to qualify. Bobby Rahal would not race in the Indy 500.

At trackside, the Rahal/Hogan design team was stunned. They had put all their effort into the project, and time had run out. As disappointed as he was, Bobby spoke to reporters before leaving the speedway. “It’s going to be an odd Memorial Day for me not being in this race. But we’ll be back next year. We’ll go get ’em again.” He thanked the fans for their support. Then he left the track.

Even after seven months of hard work, the team could not solve the car’s flaw. It was not easy to set aside this project when the team had put such effort into it. But there was nothing more they could do.

When one challenge ends, often there is another one just ahead. Bobby Rahal did not build a successful car for the 1993 Indy 500. But he never gave up on racing or winning. In fact, not long after the 1993 racing season, Bobby Rahal’s design team began working on a new Indy car engine.

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