



The Ford Global Challenge - Deakin Uni Air Powered T2 Wins the Prize

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[Last month](#), we introduced the Ford Global Challenge, through which Ford sponsored six student teams from around the world to envision and build a 21st century replacement for the Model T Ford, which is celebrating its 100th anniversary. The aim was to keep it cheap and simple while meeting sustainability challenges.

Well the winners have now been announced, and the 'T²' Air Powered Car from Australia's Deakin University was joint winner with the '2015 Ford Model T' from Aachen University in Germany.



The competition received only limited media coverage. Perhaps they have something else on their minds at the moment?

[Paddocktalk.com](#) provides the most detailed coverage:

The Challenge

The four-month competition included teams of undergraduate, graduate and even high school students from schools around the world, who worked to create innovative concepts to address the transportation needs of the future. Participating schools included: Aachen University, Aachen, Germany; Art Center College of Design, Pasadena, Calif.; Deakin University, Melbourne, Australia; Lawrence Technological University, Southfield, Mich.; University of Michigan-Dearborn, Dearborn, Mich.; and West Philadelphia High School, Philadelphia, Pa.

Each student team received \$75,000 in funding from Ford Global Technologies to support the creation of a vehicle concept through sketches, models, research papers and

potentially even working models that delivered on the brief.

The teams were challenged to create a vehicle that is simple, durable and lightweight. Each vehicle must accommodate at least two people and offer solutions that address assembly, powertrain and sustainability challenges. **Perhaps the most challenging criteria was that the concept vehicle was required to have a range of at least 200 kilometers (approximately 125 miles), and come equipped with a base target price of no more than \$7,000.**

Students worked against a deadline of Sept. 1 to submit their proposals. Five judges from Ford Motor Company, including Coughlin, critiqued each concept to select two concepts that best embodied the Model T spirit, personified the Ford brand and met the challenge criteria.

The team from Deakin university, were excited to be announced as joint winners on 1 October, as reported by [The Age](#) in Melbourne:

The Deakin University students created the 'Model T²', a three-wheel vehicle platform with a novel steering system and compressed air rotary hub motors. The Age reported on Deakin's win:

"To come away with the win has just blown us away," said Deakin team member Tim de Souza.

Mr de Souza said the team wanted to keep the car as simple and as cheap as possible and believes it could be mass produced and retailed for less than \$9000.

The T² has its compressed air motors mounted in the hubs of the front wheels, which are fixed in the straight-ahead position. The rear wheel hangs loose, like a castor wheel on furniture. Steering is achieved by directing more compressed air to one motor than the other.

The T² would have a range of 60 to 80 kilometres on a 60-litre tank of compressed air.

[Deakin University](#) has a thing or two to say about their winning car also:

Dr Bernard Rolfe, the Deakin Project Leader, said that T²'s use of the latest research and technology has re-defined the idea of an inexpensive, innovative and sustainable car. 'Our design, developed by a cross-disciplinary team effort from across the University, has "plenty of bang for the buck". As well, T² is a very green machine,' Dr Rolfe said. Ford called the design 'simple, lightweight, practical, compelling and low cost.'

Deakin University's T² runs on compressed air (with some compressed natural gas support for longer distance travel). It incorporates safety proven lightweight materials in which Deakin is an acknowledged world leader. With three wheels, it can turn 360° on itself, making inner city parking easy. The simplicity of the design means that it can be assembled at accredited Ford dealers, which was the original business model used by Ford Australia back in the early 1920s when the Model T was first launched in Australia. The key design points include:

- High torque compressed air wheel hub motors to reduce vehicle emissions to zero, depending on the distance option chosen
- Differential wheel speeds to steer the car via hub motors – so the car doesn't need a conventional gearbox, driveline and steering rack-pinion systems
- Utilising the wheel hub motor concept with only three wheels to increase agility and reduce costs and weight
- Use of Ultra High Strength Steels and novel manufacturing methods to increase strength, while reducing costs and weight
- A flexible, easily adaptable human-machine interface to keep the vehicle competitive for at least a decade of advances in software technology.

Joint award winners from Aachen University in Germany created the "2015 Ford Model T", using a basic structure with derivatives including a compact pickup, sedan, and mini city car, with a simple steel body that could be built using standard tools.

One thing I take away from this, which Ford should not find surprising, is that it's pretty darn hard to build a car for \$7,000 that can run 200 kms (125 miles) while being more sustainable than current vehicles. The fact that the Deakin Uni air car can run 80kms on its 60L tank of compressed air is impressive, but didn't meet Fords aim in the challenge, which is presumably why they also chose a simpler and more conventional car as joint winner.

Perhaps Ford with their share of the [\\$25 billion in loans](#) to the Detroit car industry will be able to go further than these university teams but I think they will find the going tough too!

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