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## NEWS FROM THE AUSTRALIAN MARITIME COLLEGE

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# Media Release

## Chiefs of Staff, News Directors

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### New handlebar design puts cyclists on the fast track

A new handlebar design that helps cyclists achieve a more aerodynamic position could be the key to Tasmanian Institute of Sport (TIS) athletes improving their performance on the track.

Chi (Addy) Ngo, a graduate of the Australian Maritime College's Co-operative Engineering Program, worked closely with TIS Head Cycling Coach Matthew Gilmore on a customised design to help cyclists go faster by eliminating turbulent air-flow between the handlebar and the forearm.

A prototype has been tested with very successful results and it's hoped the new design will be rolled out across the TIS cycling team to replace their current L-shaped handlebars.

"We've trialled the handlebars at training and through what we call power meters, and we can actually measure the difference between the old set of handlebars and the new by doing trial runs," Mr Gilmore said.

"But more importantly, competition is our biggest way of testing any new equipment. We used the handlebars last year and actually broke the State's record in the team's pursuit, so it's something we're particularly proud of as an institute, but also just being able to validate the design that the Australian Maritime College has put together for us.

"The end product has been absolutely fantastic and it looks great, it certainly turns lots of heads, people are very intrigued by the design."

Mr Ngo undertook the design project as part of his Bachelor of Engineering (Co-operative Engineering Program), in which students combine their university studies with periods of industry work placements. He graduated in 2016.

While studying the design of vessels and subsea structures may seem a world apart from competitive track cycling, the underpinning engineering theory can be applied to any field, he said.

"The aim of this project was to optimise the shape of the handlebars to achieve the best performance for the cyclists. I redesigned the handgrips so they were more

ergonomic, and adjusted the rise from the starting point to the handgrips so it was more supportive and comfortable,” Mr Ngo said.

“As well as improving its shape, the structure of the handlebars needed to be robust enough to carry the body weight of the cyclists. By applying structural analysis on the prototype, I was able to optimise the shape, weight, and how much material was needed for the design.”

A model of the best prototype was created and printed using AMC’s design software and 3-D printer, with the end result being used as a mould to build the first set of handlebars out of carbon fibre.

TIS scholarship holder Zack Gilmore first tested the handlebars at the Cycling Australia Track 2017 National Championships in Queensland.

“The first time I tried them, it was a very different feel and now that I’m getting used to it I really enjoy it. They just suit me a bit better than the other bars, they feel more customised to myself,” he said.

TIS Head Cycling Coach Matthew Gilmore said the new design allowed Tasmanian cyclists to compete at a national and international level using contemporary equipment and technology.

“In this day and age it is important to be innovative to stay ahead of the competition. Our aim is to roll out as many of the new handlebars as we can for our TIS scholarship athletes. We’ve also loved being able to work with the Australian Maritime College here in Tasmania to give Tasmanian athletes an advantage on a national platform,” he said.

Mr Ngo said taking part in the Co-operative Engineering Program was an invaluable experience and would give him an edge as he pursues a career in maritime engineering.

“The biggest difference between a standard engineering degree and the Co-op Program is the extra lessons you receive that can’t be taught in class. It has given me a clearer picture of the industry and where I want to focus for my professional career,” he said.

“This was a great opportunity for me to promote myself in terms of looking for a job and looking for a different project for me to continue on my career path, it’s a great kickstarter for my career.”

**MEDIA RESOURCES:** A media pack containing high-resolution photographs and video interviews of Chi (Addy) Ngo, Matthew Gilmore and Zack Gilmore at the Launceston Silverdome can be downloaded at:

[www.dropbox.com/sh/4hnfz567cnvu7xe/AADdpAWAvS2nj7Rssqunx7GCa?dl=0](http://www.dropbox.com/sh/4hnfz567cnvu7xe/AADdpAWAvS2nj7Rssqunx7GCa?dl=0)

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