

# Folding a winning plane

**Nishalini Saralatan** speaks to three pupils from Tao Nan School who topped their category in Singapore's largest flying machine competition



(From left) Teammates Ang Zi Hao, 11, Jiang Peiru and Chew Sheng An Simeon, both 10, took first place in the paper plane category at this year's SAFMC. ST PHOTO: LIM YAOHUI

If at first you don't succeed, fly, fly again.

This was the mindset of Team TNS6, a group of three Primary Five pupils from Tao Nan School, while preparing for the Singapore Amazing Flying Machine Competition (SAFMC) 2023.

They were taking part in the paper planes category on March 20 in which they had to fold planes they designed and launch them.

Each team was given standardised materials, which included different coloured paper for each challenge, and stationery like scissors and rulers.

The SAFMC is Singapore's largest flying machine competition. It is an annual event, jointly organised by DSO National Laboratories and Science Centre Singapore. It is open to all schools and participants who are keen to explore the science behind flight and create their very own flying machines.

The team flew its paper planes in three challenges: time aloft, range, and boomerang. Its planes were designed and folded paper planes to achieve the longest, farthest or most unique flight, respectively.

Although the team aimed to do well in all three tasks, the results in the time aloft challenge caught them by surprise.

For a moment, it looked like their paper plane was about to hit the netting that

marked the playing field, which would stop the timer for that challenge.

But it stayed aloft and landed well away from Chew Sheng An Simeon, 10, who was the team's designated launcher.

Although his first try had gone according to plan, he wanted to have a better attempt. He decided to change his release strategy by "starting really low, then scooping and throwing the plane upwards".

"I was nervous and had clammy hands, wondering if it was the right decision," Simeon said. "I had closed my eyes, but when I opened them, I saw the plane circling around."

The pupils were on cloud nine when they were told that their team had set the time aloft record of 9.09sec, compared to the previous record of 8.22sec.

In addition to receiving the Best Time Aloft Award, Team TNS6 also received the Championship Award, which was awarded based on scores from the challenges and a presentation.

Of their winning paper plane, Ang Zi Hao, 11, said: "Originally, we wanted to use a stapler to hold the plane together, but I realised that the staple would add weight. So, we decided to use double-sided tape instead."

The team prepared for the competition by researching world record-breaking paper plane designs and noting certain features like the number of folds and wing size.

Although some classic designs use fewer folds, Zi Hao acknowledged that their plane "needed more folds to get an aerodynamic design", which would allow air to pass over it easily. They ensured that the folds were done well and introduced sharp creases using a ruler.

Simeon said, "We had a few considerations like (expanding) the wing area (to give it more lift) and throwing it in a way such that it does not get pulled down by gravity. I decided to hold the plane in a way such that the air pockets can trap air, enabling the plane to stay aloft for longer."

"We (also) had to find the centre of gravity. It's about balancing the plane," said Jiang Peiru, 10. He added: "My mum finds my folding of paper planes very annoying. And then she said, 'finally your hobby has paid off'."

In the same category, a team from Xinmin Primary School won the boomerang challenge, while a team from Hong Kong's Pun U Association Wah Yan Primary School recorded the farthest flight of 40m, breaking the previous SAFMC record of 32m set in 2018.