

Aviators IG Interesting News #13 – Working for Safer Skies

Brief Summary

Aiming to make air travel safer, a 21-year-old Embry-Riddle Worldwide student is helping the Federal Aviation Administration streamline and update part of the system pilots use for navigation.

Description

Samridh Sood, a sophomore in the *Aeronautics program*, worked with Michael Watkins, a senior representative for the FAA in Southeast Asia, Embry-Riddle Assistant Professor and Academic Development Officer Dr. Jack Patel, and Interim Vice-Chancellor and Head of Asia Matthew Flaherty to address the issue of navigation waypoints that have the duplicate names.



Figure 1: Michael Watkins (Left) discussing to Samridh Sood (Right)

Airplanes today use GPS to navigate from place to place, but the routes are seldom direct. Instead, pilots use a series of waypoints defined by their geographic coordinates and given names, usually capitalized five-letter words, such as PLGRM – which is near Boston – and TWAIN, which is above the famous writer’s birthplace in Missouri.

Waypoints, which exist at every altitude at once, give pilots and controllers the aircraft’s precise location in the sky. Their names are supposed to be easy to pronounce in English, which is the de-facto language of global aviation communication.

Problems can arise, however, when waypoints have the same names. For example, there are at least five waypoints around the world known as SHARK, including one off the coast of Australia and another near Trinidad.

A duplicate name could create an issue by causing a plane to turn unexpectedly if the wrong waypoint is accidentally entered into the navigation system.

Dr. Patel said Watkins had initially drafted a proposal for the project and approached the **Embry-Riddle Asia Campus in Singapore** to see if they could help him develop an algorithm that would solve the problem of duplicated waypoint names.



Figure 2: Michael Watkins, Samridh Sood and Jack Patel in a group photo

“By integrating the unique and pronounceable codes we have generated, it will help to improve global aviation safety,” Dr. Patel said. “It will reduce the chance of pilots incorrectly selecting the wrong waypoint name.”

References:

Working for safer Skies, article by Dr. Jack Patel, Ed.D., *Embry-Riddle Aeronautical University – Asia*

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