BRIDGING SKIES

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LAYING THE GROUNDWORK FOR A GREENER FUTURE

To better prepare our next generation of aviation professionals for the 'green' road ahead, institutes of higher learning (IHLs) have integrated relevant courses and programmes on environment-related topics into their aviation curricula. IHLs recognise the need to generate awareness, educate and train aviation students and professionals as aviation impact on the environment is expected to grow in the near future.

Singapore's academic and training institutions have adopted the proactive approach of educating our next generation of aviation students on the impact of aviation on the environment and what this means for the industry. They have embedded environmentrelated subjects in their aviation-related courses to prep students for their journey ahead in addressing environmental issues. Apart from gearing students with the relevant knowledge and skills to appreciate prevailing issues in their respective fields, institutions also encourage students to partake in green research projects to enhance their training. In the process, they understand that going green is not solely about protecting the environment, it also makes business sense as it reduces operating cost.

ADOPTING A BALANCED PERSPECTIVE

Singapore's IHLs like Temasek Polytechnic (TP), Nanyang Technological University (NTU) and SIM University (UniSIM), have taken a holistic approach to addressing the education needs of their students. They have included 'green' subjects that address both the business management and engineering aspects of aviation. In the business aspect, the curricula address policies, legislations and rules that govern the operations of an aviation business. Legislations and green policies play a vital role in the business aspect of the industry as they mould and influence how the industry itself operates. They teach students to recognise the parameters that they should work within to maximise efficiency and minimise environment impact.

"We teach students about legislations and green policies and how these could impact the ways of the aviation industry. It is vital that students are taught about policies because policymaking is significant work. In fact, it is policies that drive technological advancements and how business is conducted in the industry," explained Paul Yap, Head of the Temasek Aviation & Aerospace Centre at TP.

On the engineering front, aerospace engineering and avionics courses offered by the institutions cover fundamental aircraft maintenance and aerodynamics which train students to design aircraft that are more fuel efficient, sustainable and eco-friendly. For instance, in the NTU aerospace engineering degree course, students learn to recognise practical issues the industry is facing today, such as the efficiency of the aircraft's engine, the need for aircraft drag reduction and engine noise reduction, and how the design of a more efficient aircraft and engine would benefit the environment and reduce business cost.

Beyond classroom and textbook learning, schools like TP and NTU also encourage students' understanding and involvement in green aviation through research opportunities. TP collaborated with the Economic Development Board (EDB) to build the Clean Energy Centre where they devote manpower and time to develop green technology like fuel cells, by converting hydrogen into fuel. NTU also has the Singapore Energy Research Institution, a research centre that looks into all the energy issues applicable to aviation like the development of fuel cells and solar power.

Schools are also extending research opportunities by exposing their students to industry challenges. TP, NUS and NTU assembled teams to participate in this year's Airbus Fly Your Ideas challenge, a challenge for teams to develop new ideas for greener aviation. Their teams have been shortlisted based on their submitted proposals and will now be supported by an Airbus mentor as they develop their initial ideas into more detailed submissions.

INCREASING FOCUS ON GREEN AVIATION

As much as current aviation courses have sufficient topical coverage on green aviation integrated into the aviation curricula, industry watchers foresee green aviation escalating in importance in the near future, especially with the anticipated growth in the air travel industry. Academic and training institutions are responding to industry needs by developing more specialised modules and programmes dedicated to aviation-environment studies.

An upcoming effort to highlight is NTU School of Mechanical and Aerospace Engineering's introduction of the Environmental Sustainability module, a compulsory module that will raise the students' awareness and concern of green issues in the aviation industry. It is expected to be rolled out in July 2011.

On the professional front, the Singapore Aviation Academy (SAA), training arm of the Civil Aviation Authority of Singapore (CAAS), will also be introducing a course on 'Aviation and the Environment'. The course, to be rolled out in December 2011, will provide participants with a better understanding of key environmental challenges that the air transport industry is facing today. Participants will get an update on the industry to see how social, economic and environmental issues fit together within the broader picture of sustainable development in aviation. It will cover a wide range of topics from airport environmental management, operational measures, economic measures and sustainable aviation among other topics.

KNOWLEDGE IS KEY

Tackling environmental issues is a global concern and Singapore is committed to playing part in supporting the global effort to combat climate change. Apart from exploring the development of alternative fuel sources and changing business strategies, continuous education is the next practical and enduring approach. We should endow and empower our next generation of aviation practitioners by continually providing them with the knowledge and skills to meaningfully contribute and participate in this global strife. Su Guaning, President of NTU, is convinced that education plays a vital role in Singapore's green aviation future. He opined, "Our responsibility as educators is to train the next generation so they have both the breadth and depth of knowledge to contribute to Singapore's economy and take on leadership positions in future. Establishing a solid groundwork through education is the only way that Singapore's aviation industry can pull ahead in a time when green aviation is the dominating trend."