

LA SALLE COLLEGE AEROSPACE PROJECT

La Salle College is the first and only secondary school in Hong Kong to take a giant leap in launching an Aerospace Project. With the third runway of the Hong Kong International Airport becoming fully operational in 2024, it is expected to offer more than 50,000 job opportunities in the aviation industry. The College, always striving to offer something more, aims to prepare students to grasp this opportunity.

The Aerospace Project echoes the development of STEM courses, perfectly blending science, technology, engineering and mathematics together, externalizing knowledge into practice, and encouraging students to learn through experiential learning.

Our College is pleased to partner with the Hong Kong Aviation Club (HKAC) and the Hong Kong Aerospace Leaders Association (HKALA) to provide technical support and professional advice.

The Aerospace Project has been implemented in five phases: (1) setting up the Aerospace Laboratory on campus; (2) organizing aviation taster courses and solo pilot training courses; (3) integrating basic aviation knowledge into Science curriculum; (4) hands-on experience to assemble a Jabiru aircraft; and (5) the community outreach "Talent Academy".



PHASE 1 Setting up the Aerospace Laboratory

The Aerospace Laboratory is located next to the Biology Laboratory on the 2/F East Wing of the Main Building. The venue, previously used as a classroom, was renovated and converted into the Aerospace Laboratory (Image 1). The Laboratory was officially opened in January 2021 (Image



Image 1. Panorama view of the Aerospace Laboratory



Image 2. Grand opening of the Aerospace Laboratory From left to right: Mr. Steve LEUNG, Mr. Hogan LOH (Vice-chairman of HKALA & Chairman of

Engineering Sub-committee of HKAC), Mr. TONG Wun-sing, Br. Thomas LAVIN, Mr. CHAN Chun-hing, MH (Chairman of HKALA), Mr. Samson KWOK (Vice-chairman of HKALA & Honorary Treasurer of HKAC)

The Aerospace Laboratory is equipped with a full motion Advanced Aviation Training Device (AATD) approved by the Federal Aviation Administration (FAA) - the FMX Redbird (Image 3). The cockpit inside the FMX Redbird features the layout of a Cessna Skyhawk 172S model (Image 4), which is the most popular single-engine flight training aircraft for student pilots.



Image 3. The outlook of the Image 4. The cockpit Redbird FMX



The AATD can provide a realistic training environment like 3-axis motion and wrap-around visual effect. It can simulate pitch, roll and yaw real-time movements of a plane (Image 5).





Image 5. Pitching motion of the Redbird FMX

The laboratory also features six PC desktop flight simulators (Image 6) fitted with virtual reality (VR) headsets for VR feature to provide ample opportunities for one-on-one pilot training with the instructors.

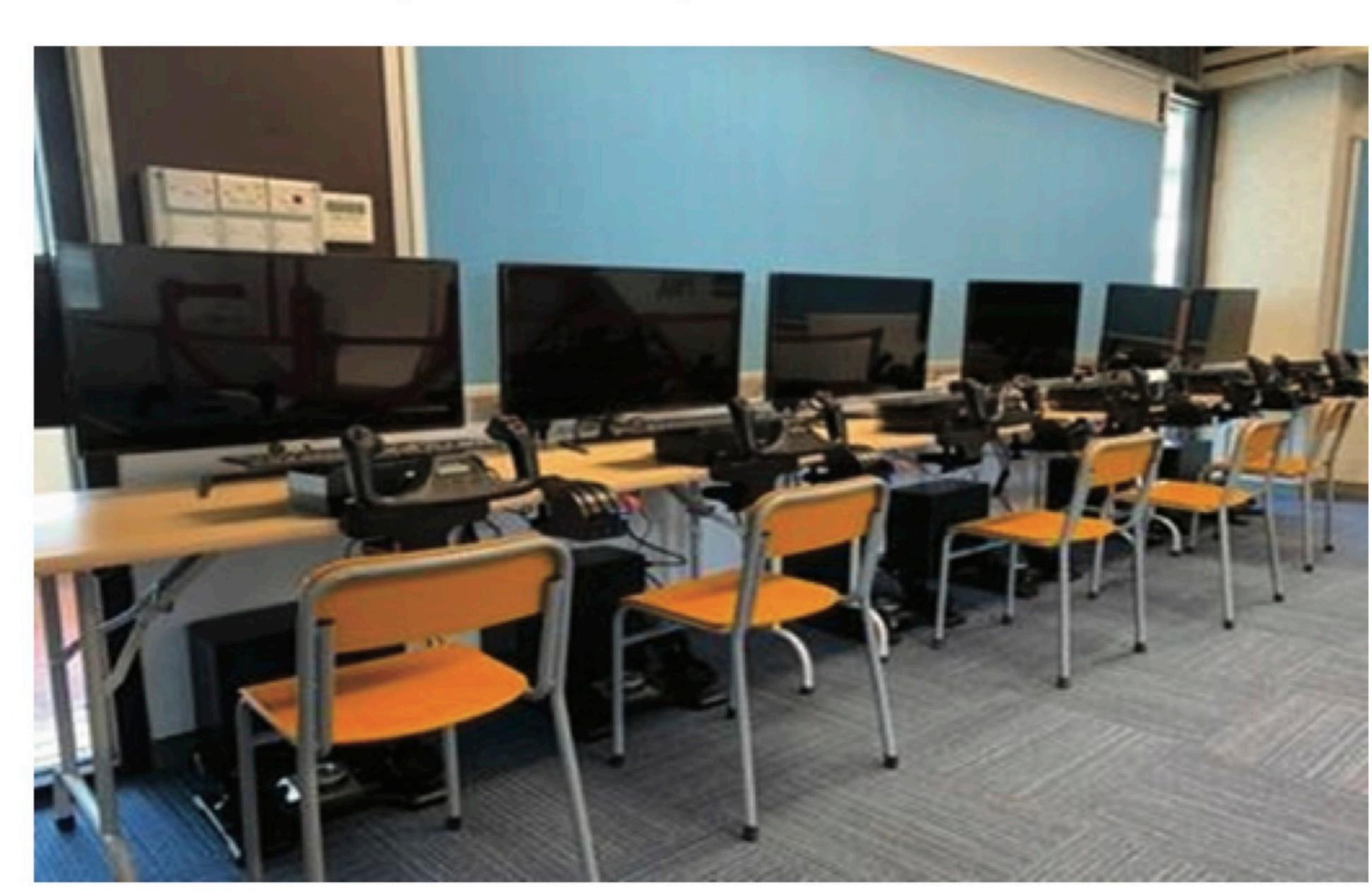


Image 6. PC Desktop Flight simulators



Phase 2: Aviation Taster course and solo pilot training course

To cultivate students' interest and basic knowledge in aerospace, our College co-organized a 30-hour aviation taster course called "Wings of Tomorrow (WoT) Programme Phase 1" with Good Hope School and The Hong Kong Aerospace Leaders Association in March to July 2021. The contents of WoT Programme Phase 1 included an introduction to the aerospace industry, and engineering workshops: building a understanding a rocket, performing pre-flight checks on airplanes, and basic aerodynamics (Image 7). All lectures and workshops were taught by professional aviation trainers, pilots and engineers.









Image 7. Highlights of the WoT Programme Phase 1

Thirty F.2-F.3 boys from La Salle College and 20 girls from Good Hope School joined the programme. Participants were awarded with a certificate of completion during the WoT graduation ceremony held in August 2021 (Image 8). The second batch of "Wings of Tomorrow" was held in October 2021. Unfortunately, due to the Omicron outbreak, the programme was forced to halt in February 2022.







Image 8. Graduation ceremony of the WoT Programme Phase 1 (First

Our College partnered with HKALA to provide ground courses equivalent to the requirement of obtaining a Private Pilot License (PPL) in February to June 2021 for both teachers and students of La Salle College. Over 20 senior form La Salle boys showed their interest in participating in the solo pilot training course. After the selection exercise, only twelve students and six teachers qualified for the 4-month solo pilot training course (Image



Image 9. Mr. Hogan LOH and teacher participants of the solo-pilot training course

Mr. Hogan LOH, the Vice-chairman of HKALA as well as one of the examiners of Private Pilot License in Hong Kong, delivered the fundamental knowledge on technical and theoretical aspects of flying, as well as the use of aeronautical information services, government references and publications for flight planning and navigation purposes. Participants benefitted from the on-site FMX Redbird and the PC Desktop Flight simulators to experience maneuvering a single-engine airplane under visual flight rules (Image 10).

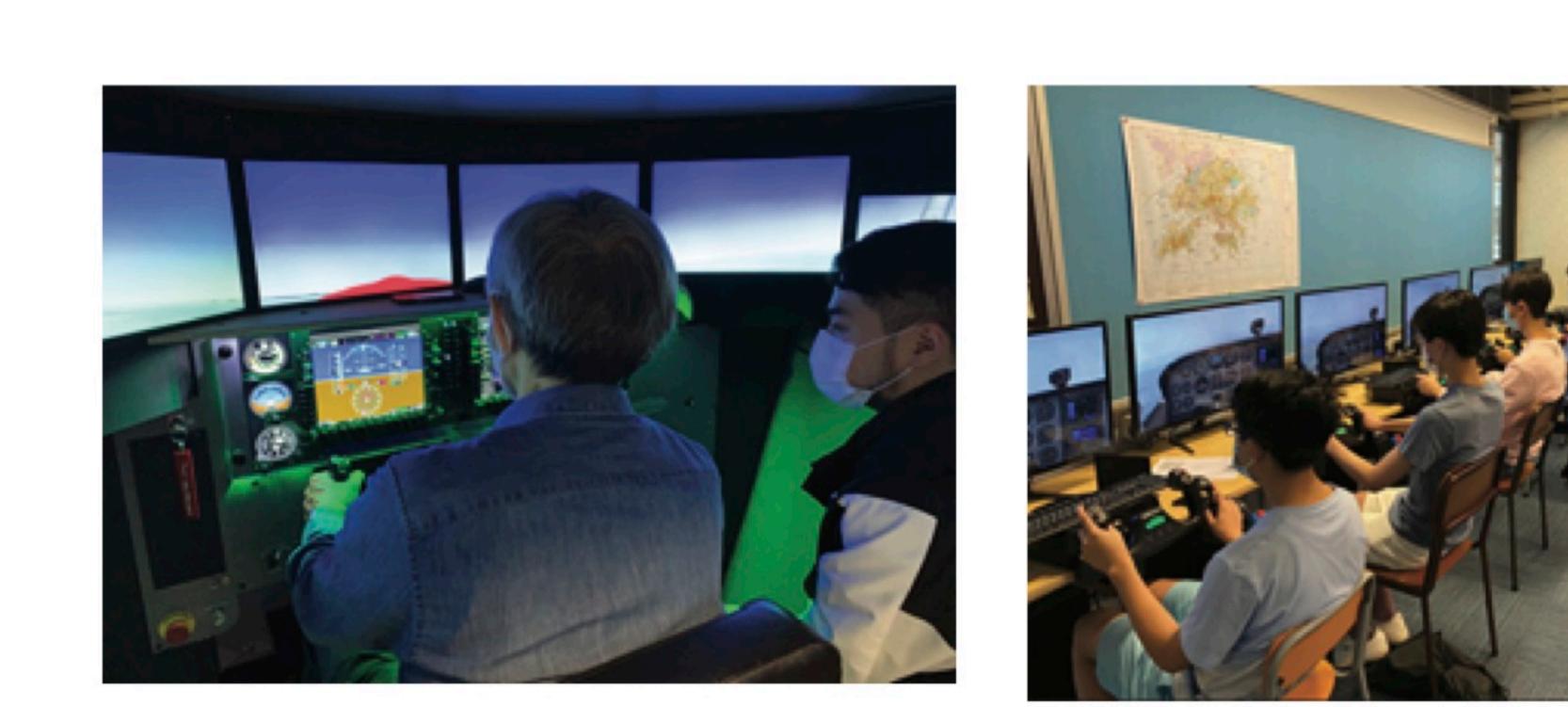




Image 10. Hands-on experience using Redbird FMX and PC desktop flight simulators

Phase 3: Integrating basic aviation knowledge into curriculum

Our College started offering basic aviation knowledge in the Junior Science curriculum in October 2021. F.2 students attend a compulsory 1-hour lesson during lunch or after school which features basic aerodynamics and introduces different parts of an aircraft. Our La Salle teachers and Old Boy pilots serve as the instructors on a voluntary basis (Image 11).



Image 11. Mr. Kennard LIU (teacher of La Salle College) and our F.2 boys

Students have ample opportunity to use the on-site Redbird FMX AATD (Image 12) and the PC desktop flight simulator (Image 13).



Image 12. Hands-on experience by using the Redbird FMX





Image 13. Hands-on experience by using PC Desktop Flight simulator

In addition, Old Boys were invited to meet our F.2 students to share their experience in becoming a commercial pilot (Image 14).



Image 14. Mr. Vicko Wong Ka Ho (Class of 2012) shared his career path with our F.2 boys

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Phase 4: Hands-on experience to assemble a Jabiru aircraft

The Hong Kong Aerospace Leaders Association (HKALA), together with the Hong Kong Aviation Club and the Department of Aeronautical and Aviation Engineering of the Hong Kong Polytechnic University, brought a six-month hands-on aircraft building workshop to La Salle College starting mid-July 2021. Eight of our F.4 and F.5 boys joined the workshop. It aimed at providing intensive training for highly motivated and talented students to gain exposure to aircraft engineering in various areas, such as the structure of an aircraft engine, designing an airfoil and servicing an airplane. The workshop instructor is Mr. William Leung, the former HAECO chief aircraft engineer (Image 15).





Image 15. Mr. William Leung, the instructor of the HKALA aircraft building workshop

Our boys not only learnt how to read blueprints and work from aircraft assembly manuals, they also learnt all the procedures for putting together an aircraft assembly, including drilling and blind riveting (Image 16).





Image 16. Drilling and blind riveting

As part of the building process, our La Salle boys even cut, filed and fit the aluminium alloy parts (Image 17), assembled the wings (Image 18) and the engine (Image 19).

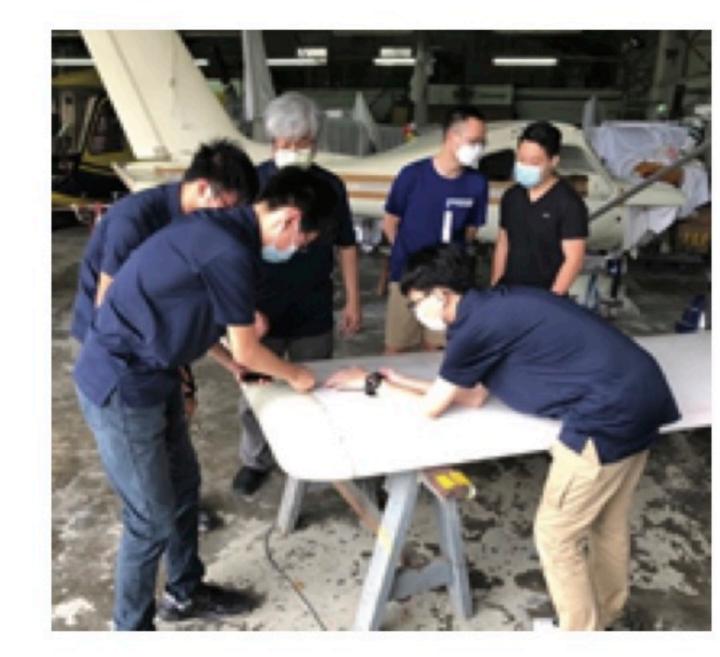






Image 17. Cutting, filing and fitting the aluminium alloy parts



Image 18. Assembling the wing





Image 19. Assembling the engine

Paint work and decals are put on the body of the aircraft in the final stage (Image 20).







Image 20. Painting work

With the full technical support of the Hong Kong Aviation Club and Mr. William Leung, this ready-to-fly 2-seater with 85 horse-power light-sport aircraft, Jabiru J170, is now sitting in front of you. The decals are our school colours: white, red and purple. Printed on the fuselage of the Jabiru J170 is the theme of our 90th Anniversary – Hearts aflame with faith and zeal (Image 21).





Image 21. Decals on the Jabiru J170

Phase 5: Community outreach "Talent Academy"

Lasallians always care for others in the community. In the academic year 2021-22, our College introduced a new compulsory Service-Learning Curriculum in the Senior Forms. Some talented F.4 boys initiated a service project, in which they make good use of their knowledge in aviation to teach primary school pupils. The objective of this community outreach is to offer an opportunity to underprivileged students to learn about basic aviation knowledge and experience our flight simulators at an early age, so as to inspire them and broaden their horizons. That is why we named this community outreach - "Talent Academy". Our F.4 boys have established communication channels with principals and teachers of the six targetted primary schools during Service-Learning lessons (Image 22). Under the pandemic, this service project will be conducted using an online mode in May and June 2022.





Image 22. Zoom meeting with principals and teachers of the target primary schools, supervised by our teachers Mr. Kennard Liu (left) and Mr. Jacky Lam (right)