

Flight Discovery Badge

Introduction: This Badge aims at inspiring Brigaders to learn and raising their interests towards aviation. After that, they can have further understanding towards the development of aviation and aerospace and understand the importance of technology for human beings.

Course Outline

1. Stage 1 Badge

i. Theory

- Understanding the history of aviation and aerospace development
- Understanding rules and safety codes in the airport area
- Understanding different aircrafts (Kites, gliders, airships, hot air balloon, vertical take-off and landing planes, autogyros, jet aircrafts)
- Understanding the major structure of modern and military aircrafts
- Understanding the basic principle of flying
- Understanding basic electronic flight instrument system and aviatational fuel

ii. Practical Training

- Visiting Hong Kong International Airport and understanding their daily operations
- Identifying five common types of aircrafts in Hong Kong
- Using a folded paper plane and handicraft plane to produce and do simple flying experiments,
- Making a plastic plane model which is similar to a real one in a suitable ratio. It must be finished and coloured completely. A Brigader is required to describe his model in detail.
- Making a kite to demonstrate its flying and single-track taking off methods, understanding the safety regulation for flying a kite

2. Stage 2 Badge

i. Theory

- Further understanding basic development progress of aviation and aerospace
- Understanding the density of air mass and the atmospheric pressure
- Understanding powered flight, streamline physics, wind shear
- Understanding turbulence, mystery of ice accretion, thunderstorm, water accumulation and fog
- Knowing about the basic principle for wind section
- Knowing about the basic function of operation panel of fixed-wing airplane or autogyro

- Knowing about the basic principles, lift, weight, relationship between thrust and drag for fixed-wing airplane or autogyro
- Understanding the lift produced by wings and its related impacts as well as the reasons for losing its speed
- Knowing about the functions and operations for flaps, slats, slots
- Understanding the principle of parachutes and landing methods
- Understanding the flight life jacket

ii. Practical Training

- Visiting related exhibitions in Hong Kong
- Identifying not less than 10 common types of aircrafts in Hong Kong
- Making two plastic plane model, including one military plane and rotocraft and giving detailed description for them
- Making a wooden glider which is able to fly

3. Stage 3 Badge

i. Theory

- Understanding the development of aerospace science and technology in China
- Understanding the structure for the launching tools
- Understanding what is a rocket and its main structure as well as the solid fuel used for it
- Understanding what is reaction and rocket launching
- Understanding conditions for weightlessness and zero gravity, earth gravity and gravitation
- Understanding different equipment such as space station, space suit, artificial satellite, space shuttle and aerospace craft etc.
- Understanding the life and work of an astronaut

ii. Practical Training

- Identifying fifteen or above common types of aircrafts in Hong Kong
- Conducting an experiment which stimulates the falling of spacecraft recycling
- Making a water rocket and conducting an experiment
- Having at least one flying experience of taking fixed-wing airplane or autogyro (Experience of boarding a civil aviation aircraft is not counted.)
- Control a plane properly inside a flight simulator and complete the take-off and landing procedure for at least one time
- Joining local, mainland China or oversea exchange activities which is about aerospace science and technology.

Assessment Criteria

1. The assessment will be conducted in written or practical form for each Badge.

Notes

1. Officers have to guide Brigaders to do research and visit different sites to study.

2. Reference

Civil Aviation Department

The Airport Authority Hong Kong

Hong Kong International Airport

Government Flying Service

Hong Kong Aviation Club

Hong Kong Aerospace Society