

A Visit to the Boeing Simulation Lab

By Leong Jern Chee, member of SSAGSg

It is day 3 of the ISAGA 2009. As part of the Social Program, participants get to visit the Alteon Training Centre. With a stroke of luck, I managed to enter my name onto



the list. Immediately after lunch, I was bundled onto an air-conditioned bus along with the other conference participants. The coach was headed towards Changi International Airport in the eastern part of Singapore, where the Boeing Simulation Lab is situated. Along the way, there was much chatter and excitement in the bus.

After much anticipation, we reached the Alteon facility. Each of us was given a visitor tag and we all gathered in a room for a short briefing from the Alteon officials. Alteon's facility is the largest aviation training center in the Asia Pacific. This new, state of the art facility, covers about 7,000 square meters. It is capable of training more than 6,000 pilots, mechanics and flight attendant students per year. There are six classrooms and two computers based training rooms. Seven full flight simulator bays are housed in the 3-storey training complex. Flat Panel Trainers are available for flight training courses, and a cabin emergency evacuation trainer is on site for flight attendant training. Following the briefing, we were then split into groups of about 6 to 7 persons. Each group visited the different training rooms on a rotational basis. The first room we went to was the room housing touch screen computers. There were at least 6 computer panels in the room that a trainee could use. The trainer can key in various flight destinations and the trainee can practise pre-take-off procedures on screen.



What a flight simulator looks like from the outside.



Cardboard printed flat panels

We also got to see the room where cardboard printed flat panels are used for training. Each station was set up to mimic the actual pilot seat on a plane. This type of lower level flight training device is effective for training a single, often procedural or technical issue. Flight attendants have to learn emergency procedures in a plane. For that, 2 sections of an aeroplane are mock-built in a room. All of us in the group had a chance to try opening and closing the plane door. Using a bit of brute strength, it was rather easy to push and pull the door.

At last, with much eagerness, we reached the highlight of the whole trip – time to go into a flight simulator! Personally, it was the first time I was actually in an airplane cockpit (albeit not a real one, but close enough for me). I was taken aback as well as amazed by the enormous number of buttons and switches on the flight panels. Despite the vast amount of knobs in the cockpit, we were told that pilots fly the planes on autopilot most of the time. Flight plans are simply keyed into the computer system and it seems that the computer will automatically do the necessary calculations and the aeroplane will know what to do for a successful take-off and landing. The pilot and co-pilot will intervene only in the event of an emergency.



This is what the inside of airplane cockpits look like.

At this point, I noticed an ‘emergency rope’ tucked at one corner of the cockpit and asked what it was for. I was told that the main responsibility of the pilot was to land an airplane safely in an emergency. Hence, assuming he or she does so and the airplane has been safely landed on the ground but the rest of the plane is wrecked or burning behind the cockpit, the only way out for the pilot is from the front cockpit windows. This is when the emergency rope comes into use as an escape after the windows are broken. The simulators are configurable and allow navigation databases to be loaded. A full flight simulator is designed to present a realistic environment to the pilot so he or she can learn to manage the aircraft in its entirety. As a demonstration, the Alteon staff simulated a light landing at the Rio de Janeiro airport. There was no motion but the simulated visuals and sound were so authentic that we all thought we were actually in Rio de Janeiro! We were told that the geographic and airport details were frequently updated to depict the real scenery so that the pilots can be familiar with the various airports.

We did a ‘touch-and-go’ landing at the Rio de Janeiro airport, i.e. the wheels of the plane touched the tarmac and then swiftly took off again. We did not taxi into any airport. A few members in our group had a chance to ‘fly’ a plane. Being ‘amateurs’ that we all are, our team members did not fly the plane professionally. The simulation was so real that the shaky visuals of some ‘bad’ flying made me feel quite nauseous. I can imagine just how genuine it must feel if all the motion, sound and visuals were used in a full flight simulation training.

The Boeing Simulation Lab visit has certainly been an eye-opener. I saw first-hand how simulation is being used effectively in training. Despite all the automation in an airplane, I am also reassured to learn that all pilots go through a grueling flight training and are drilled their primary task – safe overall operation. At least I know that I am in good hands the next time I board a plane.