



ASC 2015/16 Problem Statement

The aviation industry is growing rapidly round the world and in Singapore. Yet the awareness among the population about the aviation industry is still lacking. For example, in March 2016, the first of 67 Airbus A350 aircraft ordered by Singapore Airlines arrived in Singapore.

Fifty percent of the A350, is made of carbon composite, which allows it to achieve a high strength-to-weight ratio compared to the traditional metallic aircraft. Its light weight, advance aerodynamic design and better engine, save fuel, and enable it to travel longer distances compared to many other aircraft in the market. Using the A350, Singapore Airlines intends to have more non-stop flights to countries like the United States. The A350 is a twin-engine plane using the Rolls Royce Trent XWB engine. It is much quieter and 68 times more powerful than a formula one racing car. How many members of the public know these? Adding this fuel-efficient and more comfortable cabin design aircraft to Singapore Airline's arsenal will help increase their profits and improve passenger comfort.

However, with any flight, especially the long-haul flights, there are many issues to take into consideration during flight planning to ensure a safe journey. To plan a flight, one must consider many aspects such as route planning (airspace consideration, flight level and speed), weather (departure, enroute, destination and alternate airports), airport conditions along the route (availability of runway and facilities), aircraft condition (maintenance aspects), passenger and cargo aspects and finally the total fuel required for the flight.

Come up with a SAFE, flight plan from Singapore (SIN) to Bali (DPS) using a suitable aircraft. Your flight plan should take into account the above mentioned considerations and have a contingency plan for them. While coming up with the flight plan, you may want to use the concepts taught during the series of lectures. Also, you should consider the costs incurred for the particular flight.

Possible Problems:

- 1) Upon arrival at Bali, the weather deteriorates and reduced visibility is expected to last for the next hour.
- 2) One electrical generator failed at dispatch, remaining electrical generators remain functional; departure is allowed according to Minimum Equipment List.
- 3) A drunk and violent passenger on board is disturbing the other passengers.
- 4) Sudden airspace closure due to volcanic activity in the vicinity.

In your entry, please include detailed explanations for the considerations you took and the assumptions you made in constructing your flight plan.

Entry Submission Requirements

A written essay with maximum 2000 words is expected from all teams. PDF is the preferred format. Additional media submissions, including all other illustrations, graphics, videos are welcome. A complete bibliography is required.

Executive summary

1 page (not include in the 2000 words essay)

Format: Size 12, Arial with single spacing

Please send all submissions to aviationsafetycompetition@gmail.com by 21 April 2016 to SIAE before the deadline. Late entries (after the deadline 21 April 2016) will not be considered.

Please note that the Submission Deadline 21 Apr 2016, Thursday.

For more details, please refer to <http://siae.org.sg/asc2015/>

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