

Assignment 4: Obstruction Standards

Problem #1

The new airport is proposed for a city in China. The airport authority would like to know if the objects near the proposed airport site constitute obstacles to navigation. The proposed location of these objects is shown in Figure 1. Determine if each object is an obstruction to navigation. State which surface is the most critical for the location of each object. The runway shown in Figure 1 is 3,000 meter long and is a **precision** runway.

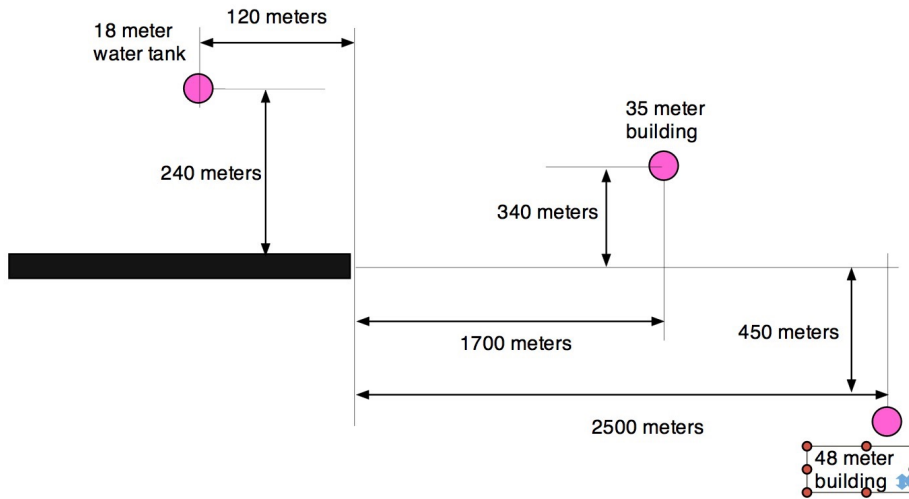


Figure 1. Potential obstructions to navigation for Problem 1.

1. Determine if the objects shown are obstacles to navigation using the ICAO design guideline for Imaginary Surfaces. Both runway ends are useable. Check both arrival and departure conditions.
2. Determine which surface will be violated (if any). State the amount of the violation.

Problem #2

- For SHA International Airport, determine the distance x shown in Figure 2. This distance represents the distance from the runway centerline to the holding bar position in the perpendicular highway. Find the holding bar location so that you will violate the approach surface. SHA has two precision runways.
- A Chinese telephone company would like to construct a 34 meter cell tower 4 kilometers from the threshold 18R. The tower would be aligned with the extended runway centerline. Does the antenna constitutes an obstacle to navigation? Explain.
- Can COMAC build a 30 meter tall hangar located 400 meters perpendicular from the centerline of runway at Pudong airport? Explain



Figure 2. SHA International Airport: North Side.

Problem #3

- Draw to scale the imaginary surfaces according to ICAO for one runway at the airport of your group.