

AIR TRAFFIC CONTROL (ATC) HOMEWORK

1) Air Traffic Control and Arrival/Approach Procedure Design

WARNING: DO NOT WAIT UNTIL THE LAST MINUTE TO COMPLETE THIS ASSIGNMENT. IT WILL TAKE TIME (I.E. REPETITIONS) TO DEVELOP THE COGNITIVE SKILLS REQUIRED TO COMPLETE.

Go to website <http://www.atc-sim.com>. Set-up the simulation according to the instructions below. Control traffic as described below. When you have successfully landed 10 flights, issue the “STATS” command to display your performance, and take a screenshot. Turn in the screenshot as part of the mid-term exam.

Notes:

ATC-sim is web-based. No plug-ins or additional software required.

Step 1) Configure Simulation on the Home page as follows:

- 1) Airport – Chicago O’Hare (ORD) (default)
- 2) Airline Codes – ICAO 3 digit (default)
- 3) Wind Direction – Wind will not change (default)
- 4) Realism – Arrivals Only
- 5) Map Scales and Markers – your choice
- 6) Press “Begin Simulation” Button

Step 2) Begin Simulation

- 1) Determine the wind direction and choose runways to land flights into the wind. Flights can use runways for arrival if tail-wind is less than 10 knots and cross-wind is less than 20 knots.
- 2) Determine an arrival and approach procedure to land on parallel runways. Use the waypoints and fixes as part of the approaches.
- 3) Enter commands as follows into the “ATC instruction” text field on the lower right and select the GO button (may not work when hit the ENTER key on some browsers). Make sure browser status bar (lower right hand-side of browser) is working to check acceptance of your ATC instructions. If not working enable Java/Java Script through Options menu on browser.
 - a. Each entry in the ATC instruction text field must be preceded by the flight number (i.e. FlightID). You can click on the flight strip to transfer the flight number to the textfield. If you type the flight number, be careful to type the flight number correctly
 - b. After the FlightID leave a space and then type one of the following instructions:

- i. FlightID L XXY (lands the aircraft on runway XXY (e.g. 27L, or 27R), must be within +/-60 degrees course with runway centerline, flying on a heading to intercept the runway centerline and 2000 ft or below to intercept a 3 degree glideslope to the runway)
- ii. Flight ID C XXX (steers aircraft to course specified by 3 digits)
- iii. FlightID C X (climbs or descends aircraft to altitude in thousands of feet specified by 1 digit)
- iv. FlightID C ZZZ (steers aircraft direct to waypoint or fix defined by three letter identifier (e.g. BONZO))
- v. FlightID C X EX (the suffix EX or X will expedite the descent or climb)
- vi. Arrivals will slow down for approach automatically
- vii. Arrivals that appear on the screen will be shown in the “flight Strip” as pale yellow boxes with Flight Number, Course, Altitude, maneuver (= level flight, up arrow climbing, down arrow descending), Type of Aircraft, and Type of procedure (e.g. arrival)
- viii. Note: Clicking on the Flight Strip for a flight automatically puts the FlightID in the “ATC instruction” text field.
- ix. Note: make sure the confirmation of your entry in the ATC Instruction text field is displayed in the status bar of the browser (lower left corner). If not “Enable Java Script” via Options menu.

Step 3) Record Your Performance Enter STATS in the textfield to display your scorecard and take screenshot, when you have landed 10 flights (20 points)

Hints:

- 1) Download and read Tutorial on ATC-Sim home page (button on right-hand side of menu bar)
- 2) Do not let plans collide (i.e. same altitude, same point in space at same time, or else you will need to start over)
- 3) Get ideas for arrival/approach procedure design from YouTube (e.g. http://www.youtube.com/watch?v=_IP75kng03w, <http://www.youtube.com/watch?v=IVh7LA5u-IU&feature=fvw>)