# TURBULENCE

AIRTRAFFIC CONTROLLER GAME

# User Manual

# Introduction

This manual aims to give a brief overview into what you can expect when you begin playing **Turbulence**. The game is based upon the role of an Air Traffic Control Officer (ATCO) where you are tasked with controlling multiple aircraft as they travel through your designated airspace.
The aim is to guide the aircraft through their assigned **waypoints** and out of their given **exit point** all while **avoiding collisions** with other aircraft.

The rest of this guide will explain the concepts, controls and features of the game. If you have any further questions, feedback or comments feel free to contact the development team below.

Thanks, and have fun!


DEVELOPERS (Team WAW):

**Liviu Pirvan** - lp752@york.ac.uk
**Oliver Ramirez** - or544@york.ac.uk
**Lewis Shaw** - lms530@york.ac.uk
**Rory Simpson** - rs1019@york.ac.uk
**Adam Taylor** - at895@york.ac.uk
**Adam Wright** - aw973@york.ac.uk

# Contents

# Set-Up

**Recommended System Requirements:**
Operating System: Windows 7
Processor: 1.6 GHz Dual Core
Memory: 2GB
Input: Keyboard, Mouse

**Software Installation:**
1) Install the latest Java Runtime Environment
    Avaliable from java.com/download
2) Download the Turbulence executable
    Avaliable from teamwaw.co.uk
Please note: if you are running the game on a CS Lab PC make sure you are running the game from the 'M' drive.

**Installation from source code:**
1) Install the Eclipse IDE from
    Avaliable from www.eclipse.org
2) Download the Turbulence source code
    Avaliable from teamwaw.co.uk
3) Load the Eclipse project into the program
4) Open the 'game.jar' class located in the stateContainer package
5) From the top tool bar select Run -> Run As -> Java Aplication

# Menu Navigation

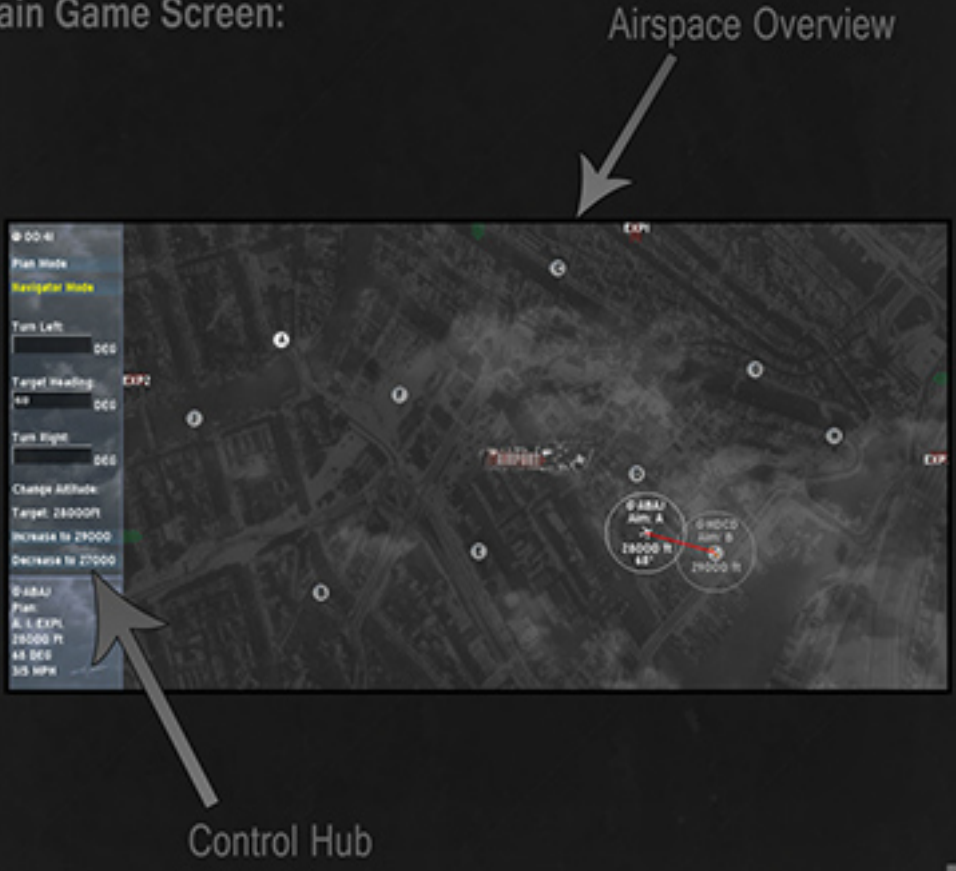
## Main Menu:


## Difficulty Select Screen:

# Interface Guide

The main game screen is divided into two primary sections, the **airspace overview** and the **control hub.** The airspace overview provides you with a top down perspective of all the aircraft, waypoints and exit points you will need to keep track of. The control panel gives a quick reference for various flight parameters such as heading and altitude.

Main Game Screen:



# Airspace Overview

**Navigator Mode:**
The navigator mode is used for giving comands to flights in your airspace. Click on an unselected flight to select it, and then click and drag in its control circle to give a new heading.

# Airspace Overview

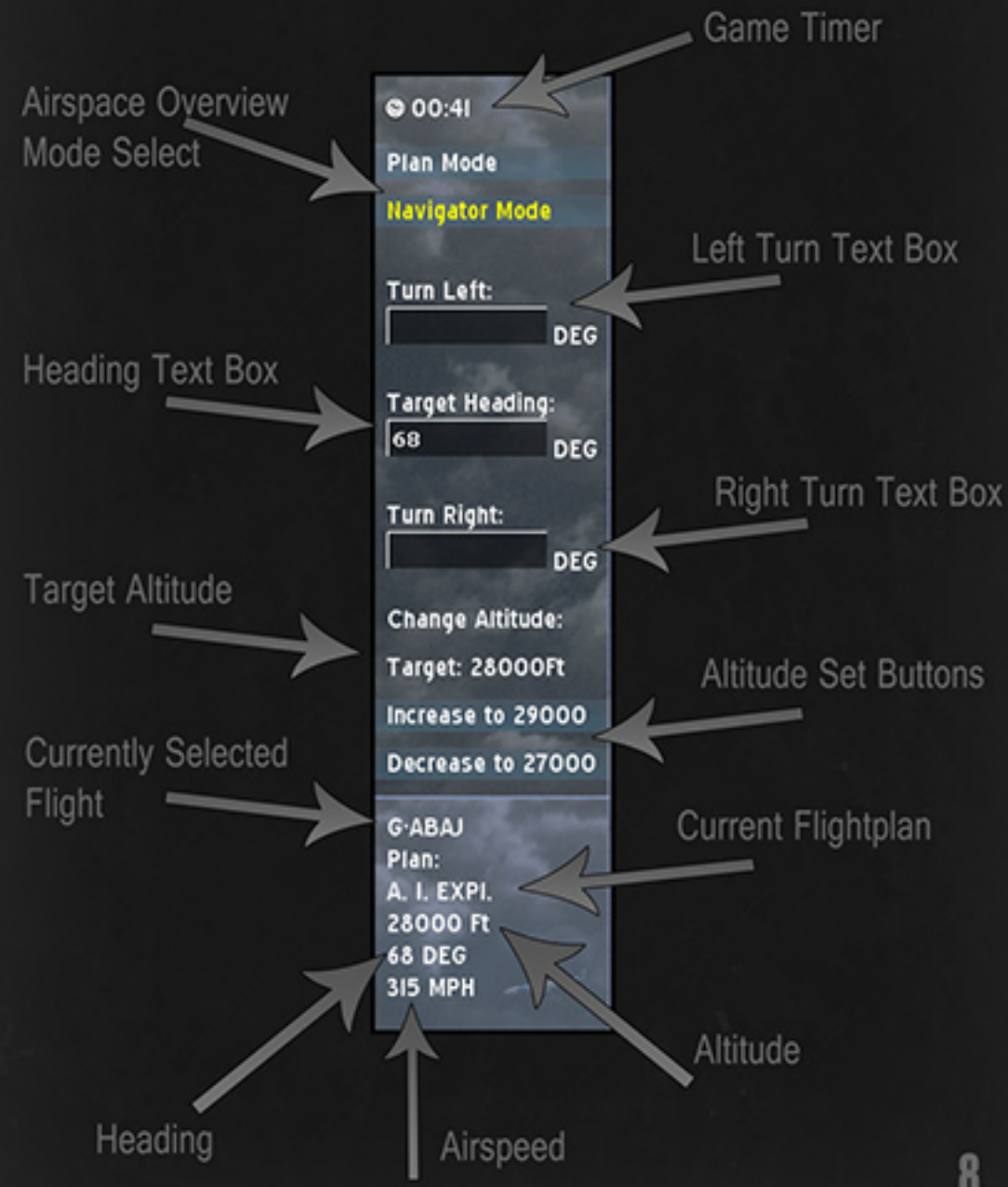
**Plan Mode:**

Plan mode is used for re-assigning waypoints to the selected flight. You can click and drag on a waypoint to move the waypoint connection line to another waypoint. You can re-assign any waypoint to any other waypoint but you cannot change the total number of waypoints for a flight.

Waypoint Connection Line

Waypoint

# Control Hub


Game Timer
Airspace Overview Mode Select
00:41
Plan Mode
Navigator Mode
Left Turn Text Box
Turn Left:
DEG
Heading Text Box
Target Heading:
68
DEG
Right Turn Text Box
Turn Right:
DEG
Target Altitude
Change Altitude:
Target: 28000Ft
Altitude Set Buttons
Increase to 29000
Decrease to 27000
Currently Selected Flight
G-ABAJ
Plan:
A. I. EXPI.
28000 Ft
68 DEG
315 MPH
Current Flightplan
Altitude
Heading
Airspeed

# Controls

**Mouse:**

Mouse 1 selects an on screen element, such as a flight, textbox or waypoint.

Clicking and dragging with mouse one allows you to move an element around the screen. When clicking on a selected flight this allows you to order a new heading to be flown. When clicking on a waypoint it allows you to re-allocate a new waypoint.

**Keyboard:**

Up Arrow - Increase Altitude
Down Arrow: Decrease Altitude
P - Pause

# Glossary

**Airspace Overview** - Primary View to the right of the game screen
**Altitude** - Distance the flight is above the ground
**Control Circle** - Circle around a currently selected flight
**Control Hub** - Panel on the left of the main game screen
**Entry Point** - A point where flights will enter the airspace
**Exit Point** - The final objective of a selected flight
**Flight** - Any aircraft in the players airspace
**Flight Plan** - The route through the airspace, includes waypoints and exit points
**Heading** - Bearing between 0 and 360 that the flight is flying
**Nav Mode** - Used for controlling aircraft
**Plan Mode** - Used for adjusting a flights waypoints
**Text Box** - A control where you can precisely enter new values
**Waypoint** - A static point on the map, used for navigation

# Acknowledgements

DEVELOPERS (Team WAW):

Liviu Pirvan - lp752@york.ac.uk
Oliver Ramirez - or544@york.ac.uk
Lewis Shaw - lms530@york.ac.uk
Rory Simpson - rs1019@york.ac.uk
Adam Taylor - at895@york.ac.uk
Adam Wright - aw973@york.ac.uk

Music Assets:

"Jarvic 8" Kevin MacLeod (incompetech.com)
Licensed under Creative Commons: By Attribution 3.0
http://creativecommons.org/licenses/by/3.0/