

# User Guide

Main window controls, covering three menus:  
1) **File** options to save in PNG the views individually or the full configuration; Importing and exporting XML configuration files option can also be found here.

2) **View** covers the Font and Colour options; (Default, Medium and Large)  
(Protanopia, Deuteranopia and Tritanopia)

3) **Help** opens this user guide.

A slider responsible for the **zooming** of the graphical representation of the calculations

**Expandable menus** for configuring the airport, runway and obstacle

Tab controls for switching between the **Side-On** and **Top-Down** view of the runway visualization

Option that rotates the **Top-Down View**, according to the runway degree, the **Compass** acts as a helper for understanding the runway degrees

**Original values/Recalculated values tables:** Once user performs calculations, these tables will be populated and show the corresponding values

Breakdown displays the calculations, for each runway, the calculations are in a separate area. Different tabs filter the calculations by parameter

Elements marked with these symbols can be expanded/collapsed to allow better personalisation

**Edit / Calculate buttons:** when user decides to perform calculations, he can click **Calculate** button which changes its text to **Edit**, the Expandable menus become disabled and can only be re-enabled by clicking on the **Edit** button.

**Console** that shows a log of what is happening, when interacting with the UI, user can check console for confirmations that action happened

The screenshot shows the 'Runway Re-declaration Tool' interface. It features a central visualization of a runway layout with various parameters like TODA, ASDA, LDA, and TORA. The interface includes a 'Runway Settings' panel on the left, a 'Runway' panel with 'Physical runway' and 'Runway 1'/'Runway 2' settings, and a 'Runway' panel with 'Physical runway' and 'Runway 1'/'Runway 2' settings. The main visualization area shows a runway layout with various parameters like TODA, ASDA, LDA, and TORA. The interface also includes a 'Compass' and a 'Zoom' slider. The right side of the interface displays 'Original values' and 'Recalculated values' tables, a 'Calculations breakdown' section, and a 'Console' log.

	TORA	TODA	LDA	ASDA	THR
9L	3902	3902	3595	3902	306
27R	3884	3962	3884	3884	0

	TORA	TODA	LDA	ASDA	THR
9L	2996	2996	2885	2996	306
27R	2990	2990	3100	2990	0

**Calculations breakdown**

ALL TORA TODA LDA ASDA

--9L--  
TORA: 3902 - 300 - 300 - 306 = 2996  
TODA: 2996 + 0 = 2996  
LDA: 3595 - 300 - 60 - (7 \* 50) = 2885  
ASDA: 2996 + 0 = 2996

--27R--  
TORA: 3400 - (7 \* 50) - 60 = 2990  
TODA: 2990  
LDA: 3400 - 240 - 60 = 3100  
ASDA: 2990

Selected config ---  
Airport: London\_Gatwick (LGW)  
Physical Runway: ID:3 9L/27R Placed Obstacle: Airplane  
Left Runway: Degree: 9 Direction: L TORA: 3902 TODA: 3902 ASDA: 3902 LDA: 3595  
Threshold: 306  
Right Runway: Degree: 27 Direction: R TORA: 3884 TODA: 3962 ASDA: 3884 LDA: 3884  
Threshold: 0  
Obstacle Name: Airplane Height: 7 Width: 20

# Configuration menus

## Common Buttons:



- +** Go to a menu to create a new Airport/Runway/Obstacle
- To delete selected Airport/Runway/Obstacle
- Edit** Go to edit menu for the selected Airport/Runway/Obstacle
- Save** Save a new/edited Airport/Runway/Obstacle
- Cancel** Cancel creating a new/editing Airport/Runway/Obstacle and return back to the main menu

## Airport Configuration menu

### Creating a new airport

**Note: Changing an airport will unselect current Runway and unplace any placed Obstacle**

## Runway Configuration menu

### Creating a new runway

**Note: Changing a runway will unplace any placed Obstacle**

Value range: [0, 9999] m

Dropdown showing selected runway. Other runways are shown when **clicked**.

### Editing runway

## Runway Configuration menu

### Creating a new obstacle

### Editing an obstacle

Value range: [1, 999] m

**Obstacle placement menu, only enabled when a runway is selected**

Places the specified obstacle on the runway, only enabled when a runway is selected

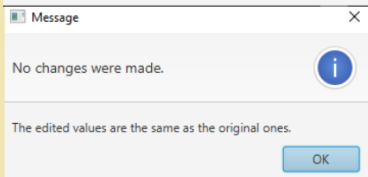
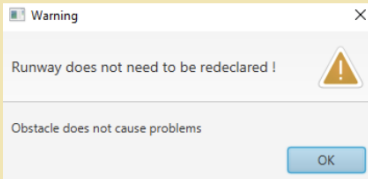
Value range: [-9999, 9999] m

Value range: [-99, 99] m

# Errors

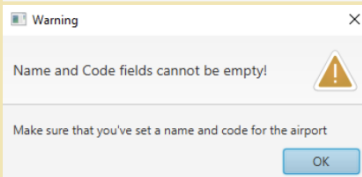
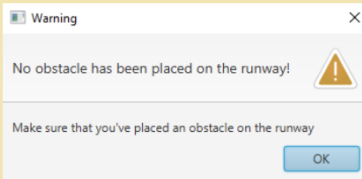
The runway redeclaration software supports **error/warning messages** with prompts of what to change and probable cause. They cover some cases of inappropriate user inputs as well as calculation requirements.

No redeclaration needed when obstacle is **irrelevant** to the runway's workings.



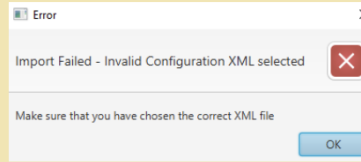
An edit button click **without any alteration** of the previous values.

A requirement for recalculating is to have the obstacle **placed**.

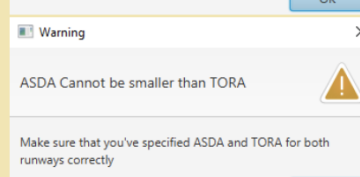
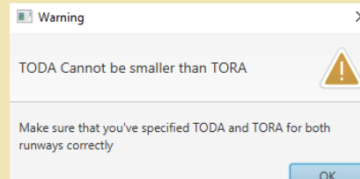


**No input field can be left empty,**

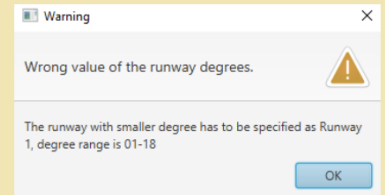
Error arising from importing files



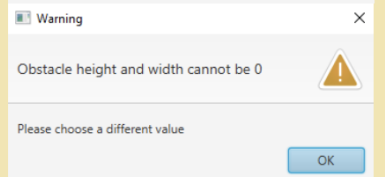
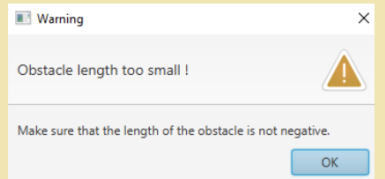
ASDA and TODA **can not realistically be smaller** than TORA as they consist of TORA plus other components.



The degree values inputted must be in range.



Obstacle length, height and width must be **positive non-zero** integers.

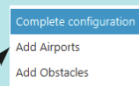
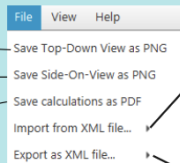


# Import/Export

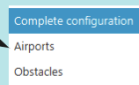
Saves specified views as a picture

Creates a pdf report of the calculations

**note: files can only be saved once calculations are performed**



Imports the whole configuration from a XML file and **rewrites any progress made**  
Appends the airports with their corresponding **runways**  
Appends the **obstacles**



Exports the whole configuration to a XML file  
Export only the airports as XML  
Export only the obstacles as XML