

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

Calculations 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 '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 '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.

	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

Editing airport

Dropdown showing selected airport, Other airports are shown when **clicked**.

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

Only allows 3 IATA format (3 Capital letters)

ID number acts as a unique identifier of the runway

Creating a new runway

Runway Settings

Physical runway ID:3 9L/27R

Runway 1	Runway 2
L	Position R
9	Degree 27
3902	TORA 3884
3902	TODA 3962
3902	ASDA 3884
3595	LDA 3884
306	THR 0

Save Cancel

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

Editing runway

Runway Settings

Physical runway ID:3 9L/27R

Runway 1	Runway 2
L	Position R
9	Degree 27
3902	TORA 3884
3902	TODA 3962
3902	ASDA 3884
3595	LDA 3884
306	THR 0

Save Cancel

Note: Changing a runway will unplace any placed Obstacle

Value range: [0, 9999] m

Creating a new obstacle

Obstacle Settings

Obstacle name Boeing 747

Name Width Height

Save Cancel

Editing an obstacle

Obstacle Settings

Obstacle name Boeing 747

Name Width Height

Save Cancel

Value range: [1, 999] m

Obstacle placement menu, only enabled when a runway is selected

Obstacle Settings

Obstacle name Boeing 747

Name Width Height

Distance from 9L threshold 300

Distance from 27R threshold 300

Distance from Central Line 30

Direction from Central Line L

Place obstacle

Value range: [-9999, 9999] m

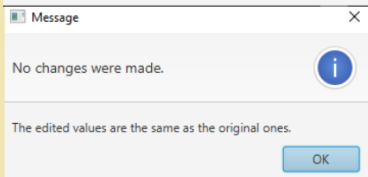
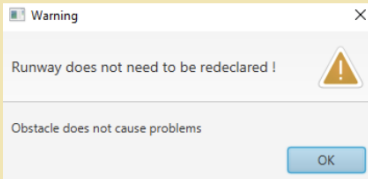
Value range: [-99, 99] m

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

Errors

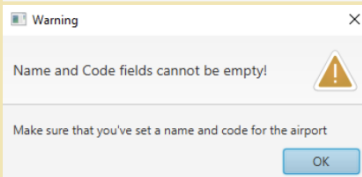
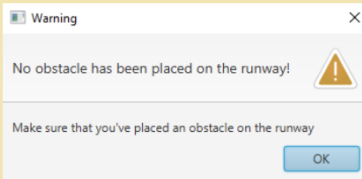
The runway redeclaration software supports **error/warning messages** with prompts of what to change and probable cause. They cover some cases of inappropriate user inputs as well as calculation requirements.

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



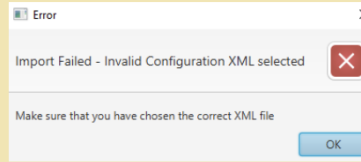
An edit button click **without any alteration** of the previous values.

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

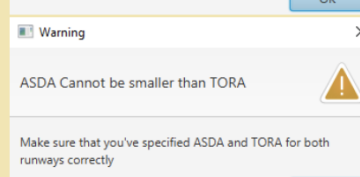
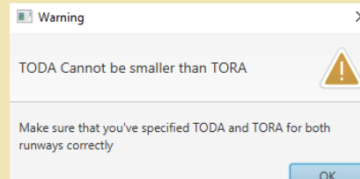


No input field can be left empty,

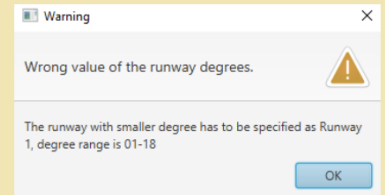
Error arising from importing files



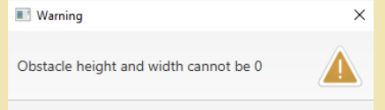
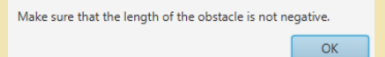
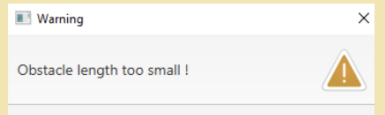
ASDA and TODA **can not realistically be smaller** than TORA as they consist of TORA plus other components.



The degree values inputted must be in range.



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

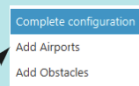
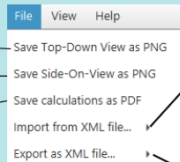


Import/Export

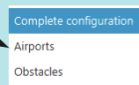
Saves specified views as a picture

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