ExcellentShot

www.excellentshot.net

Shooting range simulator

Professional

+ Camera

Instructions for the electronic shooting range ExcellentShot

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Installing the Projector and Camera

* Projector and camera location: ceiling mounted preferably.
* The distance to the screen depends on the projector and screen size, but it's important not to forget about the camera, which has its own visual characteristics.

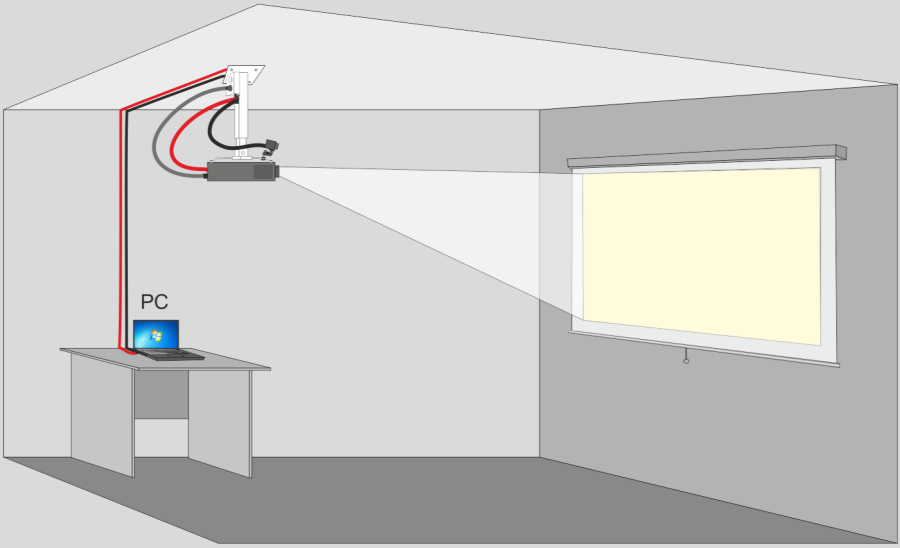
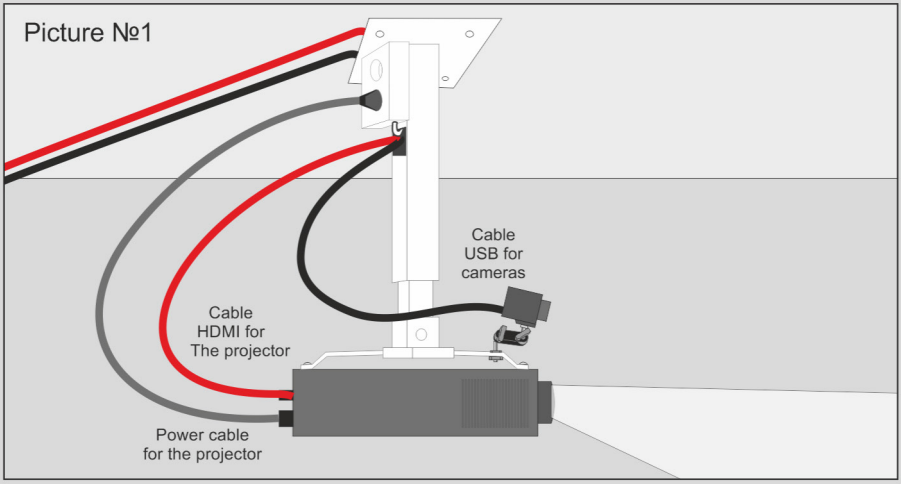


Table of recommended options taking into account camera parameters.

Width screen	Approximate distance attaching the projector and camera to the screen
135 sm	1,5 m
180 sm	2,0 m
220 sm	2,5 m
270 sm	3,0 m
320 sm	3,5 m
400 sm	4,0 m

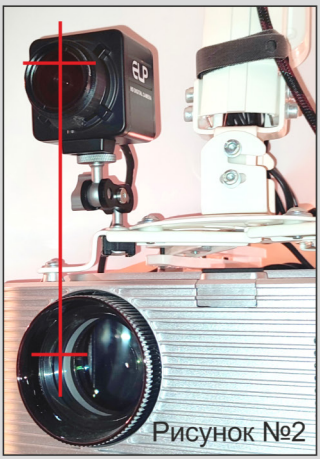
Connecting to a PC and mounting the camera

1) Projector Power Cable, as shown in picture №1.
2) The cable for transferring the video/audio projector to a PC, usually HDMI. (The projector must be connected to a video card)



3) USB cable to connect the camera to a PC, preferably use active, with good power transmission, or an ordinary cable, no more than 5 meters long.

Camera mount



Mount the camera firmly above the lamp projector using a convenient latch, as shown in picture №2.

The screen projection must be completely remain in the video camera image in the AI Camera program.

Try to position the camera as best as possible more evenly, relative to the projection horizon.

High brightness projector transferred to “eco mode”, for extension A lamp for life and a better job.

Installation

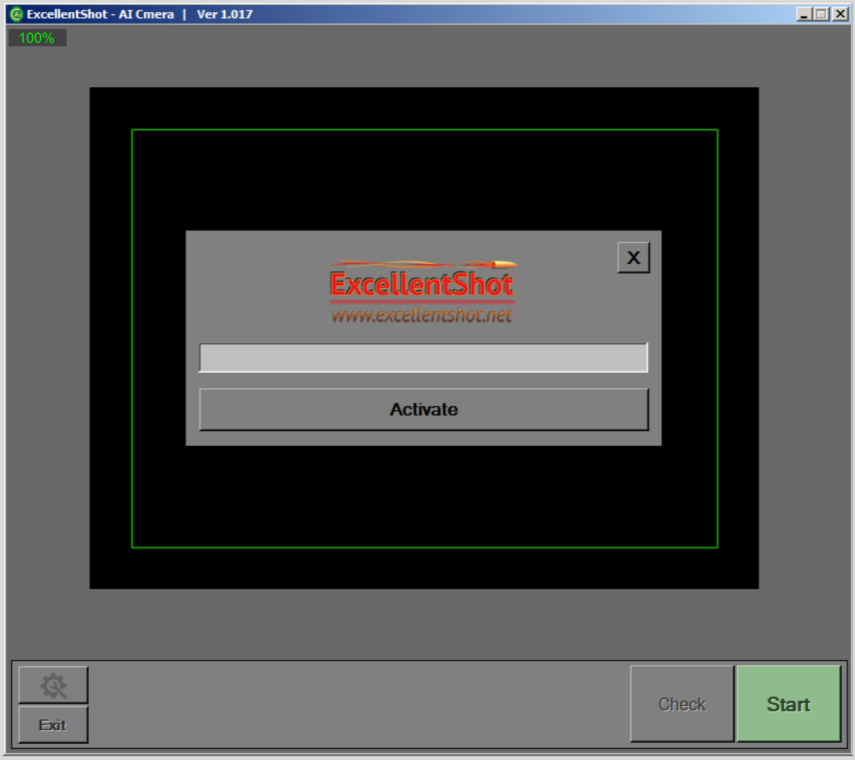
Connect the installation SSD disk to your PC.

(For the shooting range to work,
the SSD must be permanently connected to the PC.)

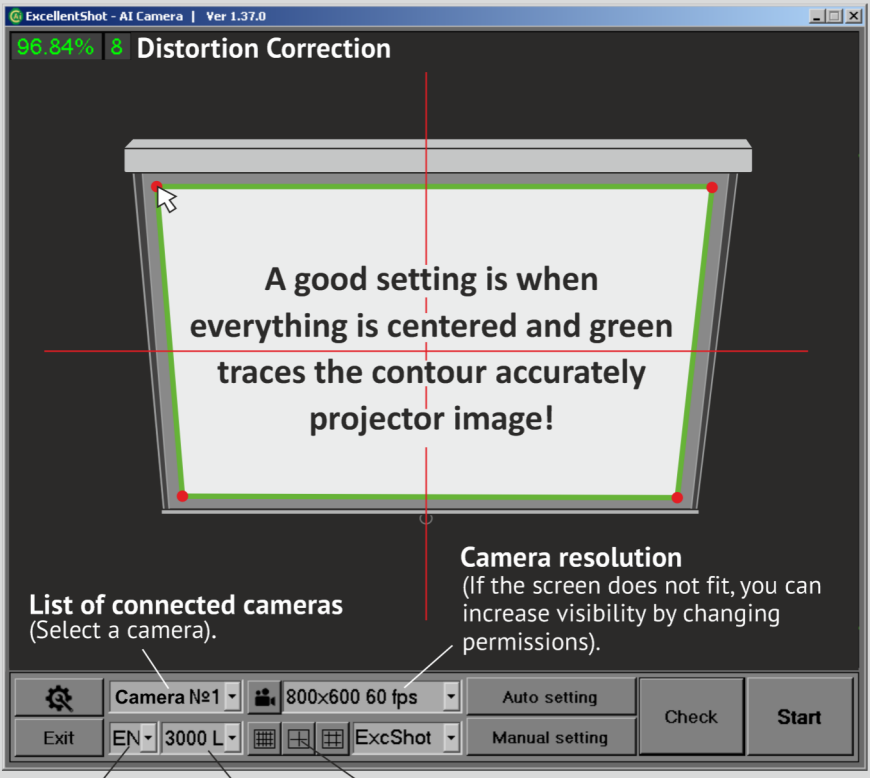
To install the program, you need to run the file ***AI Camera.exe*** and finish unpacking to the specified path.

Activation

When you launch the AI Camera program for the first time, you must activate enter the activation code, which is located in the “Readme.txt” file, on the installation disk.



If the activation window closes and the buttons work, that means everything done right.



1) Open settings by clicking the ⚙ button.

2) Click the **"Manual setup"** button and wait for the screen to return with a screenshot.

3) Click once with the left mouse button in each corner of the light screen as indicated in the pictures in red.

4) After the fourth click, the display will return to the camera already with the green outline outlined as in the drawing.

This setting is enough to do once if everything is well fixed.
If the camera or projector is shifted, the green border will be shifted.
So you need to return the offset or repeat the setting again.

By clicking the "Auto Setup" button and waiting a few seconds, the program will do all the setup on its own.

In case of bright room lighting and dim screen, **"Auto setup"** may not be effective.

If the result is not accurate, use **«Manual Tuning»**.

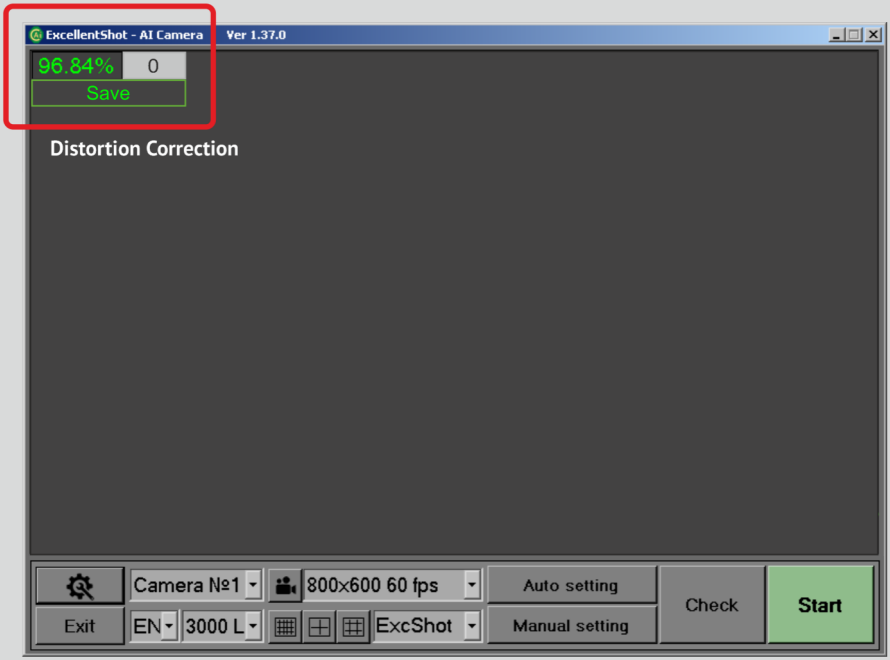
Distortion Correction

Starting with version "Ai Camera 1.36.7" added: improved accuracy, which is determined automatically after each calibration.

Also, the value can be entered manually by clicking the mouse by percentage, enter the value, then click the **"Save"** button.

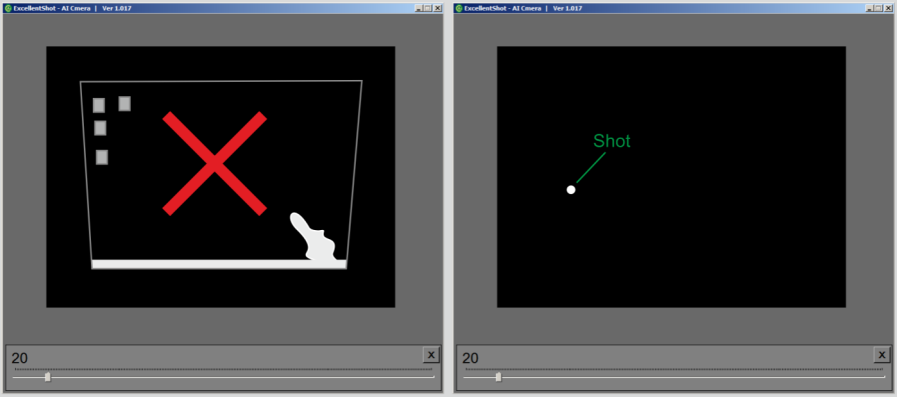
Automatic mode will be disabled and the value after The calibration will no longer change.

If you need to return to automatic mode, you need to set value **"0"** and **"Save"**.



First, eliminate bright lights in the room.
If another monitor is connected to the computer, you need to Screen options switch the image to the projector only!

Before each launch of the shooting range, check the brightness, to prevent accidental light from shining onto the screen!



By clicking the **“Check”** button, a black window with settings will open sensitivity.

There should just be a black image like the one on the right, and when you fire, a white dot will appear.

To complete the check, click the **“X”** button.

After pressing the **“Start”** button, the program will be minimized and you canshoot at the screen, if the cursor moves, then everything works. Next, you can launch the program - **Shooting range simulator**.

If the cursor does not respond or the shooting program is constantly shooting, it is likely that light is hitting the screen somewhere.

Several ways to regain control:

Option 1: *Eliminate light if possible.*

Option 2: *Cover the camera lens and press the “Stop” button.*

Option 3: *Restart your computer by pressing the power button.*

Option 4: *Disconnect the camera cable, then close all programs.*

Connect the installation SSD drive to your PC.

(For the SSD drive to work, the drive must be connected to the PC at all times)

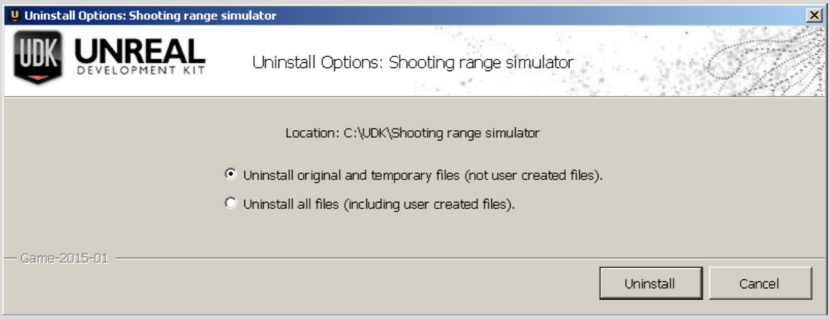
To install the program, you need to: run the file **ExcellentShot - Shooting range simulator.exe** , and finishunpacking to the specified path.

Afterwards, you need to: install the **Stages Pack.exe** exercises,and finish unpacking to the specified path.

When you first start the program, after installation, you should skip the start screen by pressing the Enter button, then set the display resolution to the same as on the desktop - windows, - and other settings!!!
(more details p. 10)

Program update

To update the program, you must first remove the program itself by selecting the first item (not user created files):



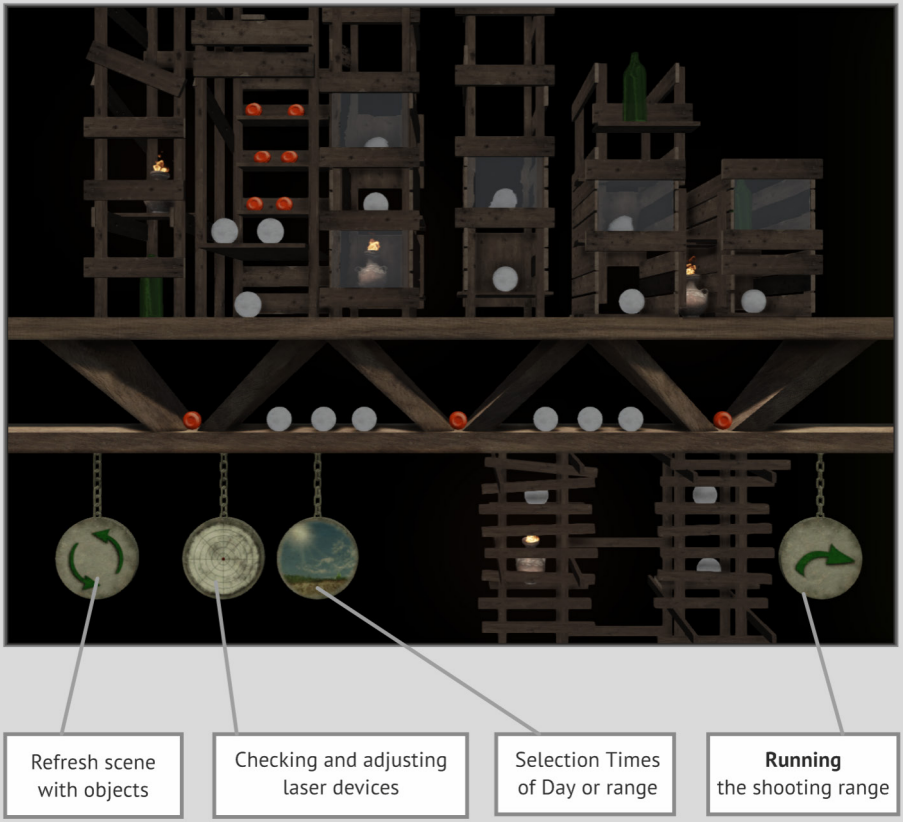
Next, install the new version in the same directory where the program was. With this method, all data, namely: exercises, records and settings will remain unchanged.

If you lose your SSD key, your license will not be restored. If your SSD key is broken for some reason, it can only be restored if you have a broken original.

For stable operation of the program, SSD key must be connected all the time.

Shooting range selection

At this stage, you can choose another time of day: morning, day, sunset, night, etc. or another range.
Also, check the accuracy of the settings of the laser equipment.
(There is a possibility of some customization)



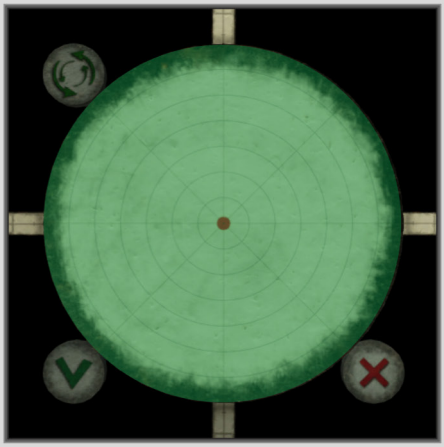
If the laser shooting does not correctly transmit the signal, or just do not connected - you can turn on the mouse cursor by pressing the button F3 on the keyboard. The default shot is the left mouse button.

Checking the accuracy

After shooting at the target, the remote control will open the mode for checking the accuracy of the laser equipment and the shooting range itself. In the upper right corner, with each shot, two offset values will be displayed along the X and Y axes.

Additional calibration

To add a correction, you need: shoot the button, when the target turns green, aim and shoot to the center. If the result is not satisfied, try again. If you are not satisfied with the result, try again.

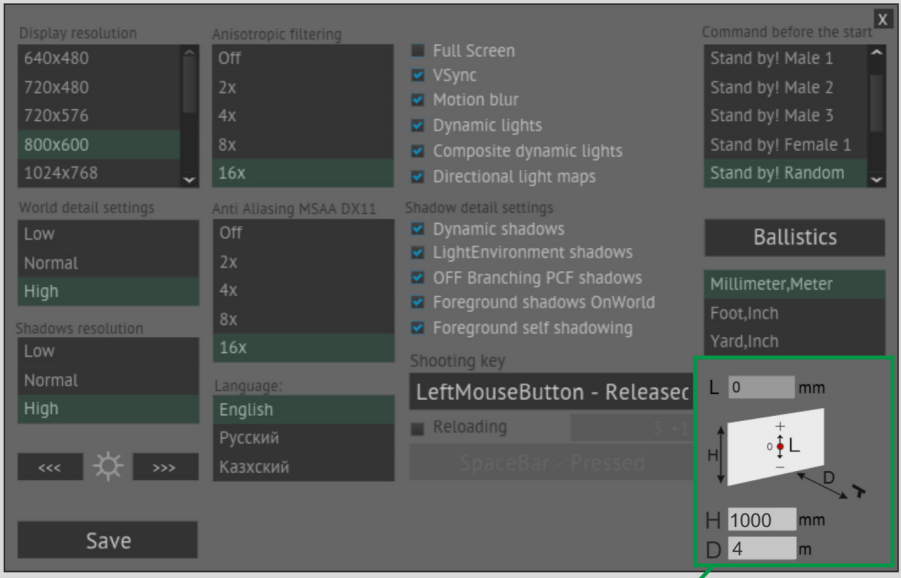


After, you can save the setting: Shoot by the button

To reset the settings, you need: shoot the button when The target will turn green, aim and shoot at or just press F4 to disable additional calibration.

To exit or cancel the calibration, you need to shoot by pressing the button or press the Esc button on the keyboard.

Setting distance and real proportions



In order to distance targets coincided with real distance
You need to specify 2 parameters:

H - The size of the displayed screen vertically.
D - Distance from the displayed screen to place the shooter in the hall.
Changing the "**H**", on the side will display the recommended value for "**D**".
Changing the "**D**", on the side will display the recommended value for "**H**".

L - Correction of the offset due to the camera angle tilt.
(This parameter does not need to be entered if you are configuring the program ***Ai Camera - Distortion Correction*** *)*

Also, these settings are very important. with ballistics on!

Ballistics and signal settings

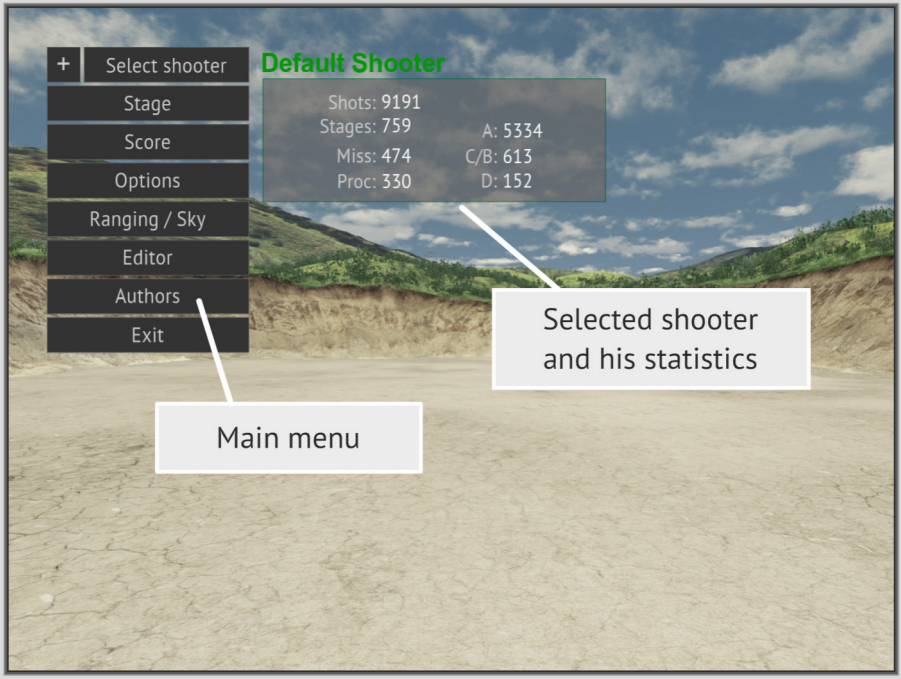
The program has 45 types of cartridges with approximate ballistics: 15 - Handgun, 15 - Shotgun (Bullets) and 15 - Rifle. At will, you can set your own values for example taken from a ballistic calculator.

Balistics settings are saved in the **“BallisticsTrace.bin”** file in the shooter folder.

If ballistics will be turned off bullet trajectory will fly in a straight line.

Button or mouse signal that responds for shooting. Inclusion of additional function for counting shots and reload button.

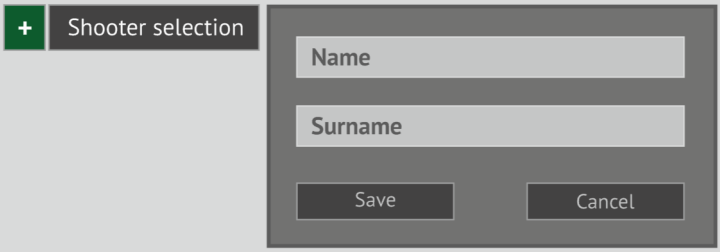
Main menu and shooter statistics



+ Select shooter	- Creating and choosing shooters
Stage	- Selection of stages
Score	- Comparative results for open stage
Options	- Settings (Graphics, Balistics and additional functions)
Ranging / Sky	- Choice shooting and time of day (Starting level)
Editor	- Editor for modifying and building stages
Authors	- Information on project developers
Exit	- Exit from the program

Add new shooters

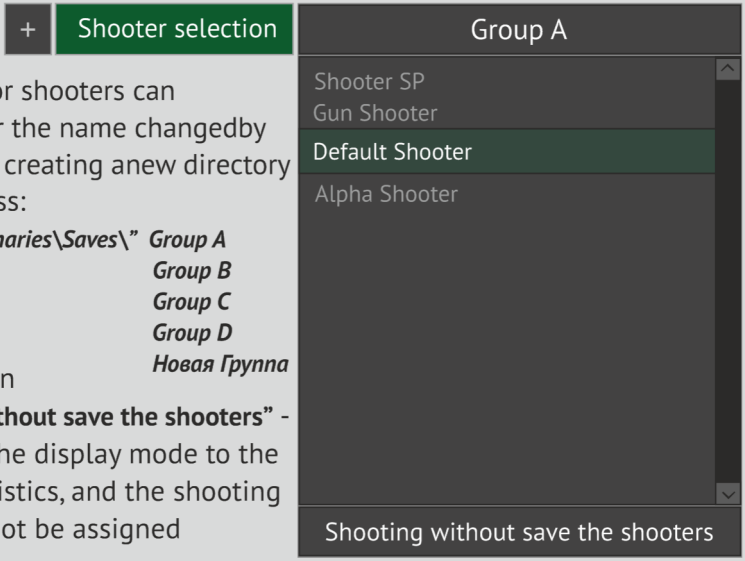
Button “+” opens a window for adding a new shooter.



For each shooter, a folder is created with the name -“**Name_Surname”** In which will be: a part of personal statistics, settings for ballistics and exercise plans created by the selected shooter.

Shooter selection

The **“Select shooter”** button opens a window for selecting the shooter from the group list. You can also change the group.



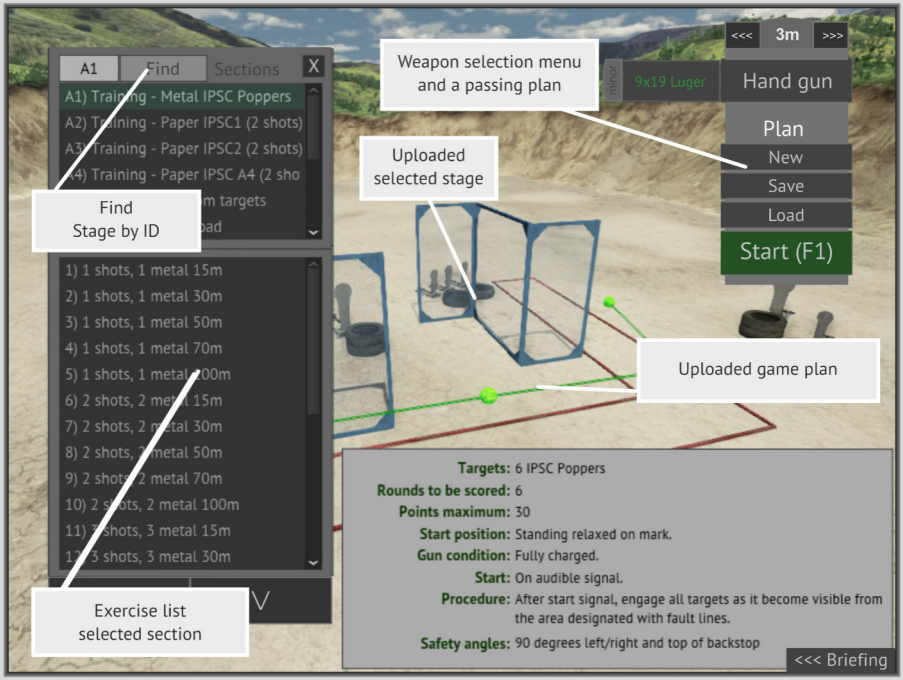
A group for shooters can becreated, or the name changedby changing, or creating anew directory at the address:

“C:\UDK\Binaries\Saves\” ***Group A***
Group B
Group C
Group D
Новая Группа

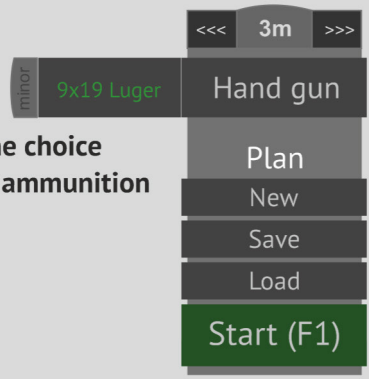
The button **“Shooting without save the shooters”** - will return the display mode to the generalstatistics, and the shooting resultswill not be assigned to the shooter.

Stage selection

When you select the stage, it is immediately loaded and displayed on the shooting range.



Menu for selecting weapons and a plan for passing.



The choice of ammunition

Distance of the shooter from the screen (Affects the calculation of proportions and ballistics)

Weapon selection

Game plan menu

Create a new game plan

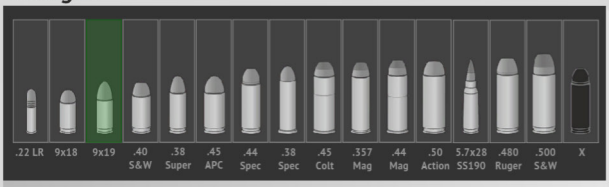
Save plan

Load plan

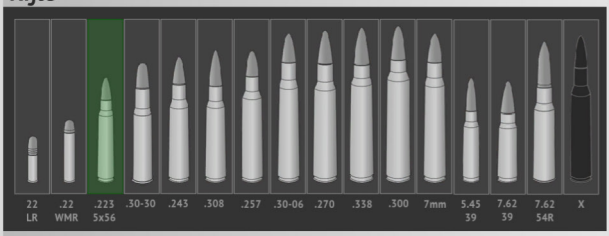
Start stage to shoot

The choice of weapons and ammunition

Handgun

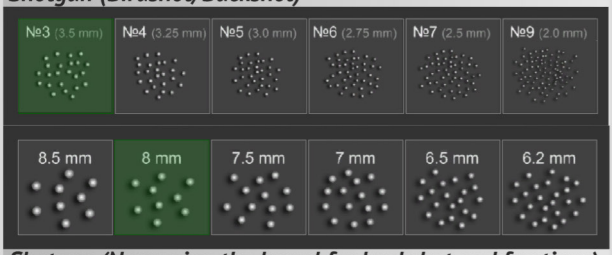


Rifle



Shotgun (Bullet)

Shotgun (Birdshot/Buckshot)



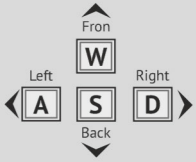
Shotgun (Narrowing the barrel for buckshot and fractions)

Game plan - Create / Load

The created plan is attached to the already selected shooter. When you save or load the link also remains.

Plan	***Game plan menu***
New	Create a new game plan for selected stage
Save	Save plan
Load	Load plan
Start(F1)	Start stage to shoot

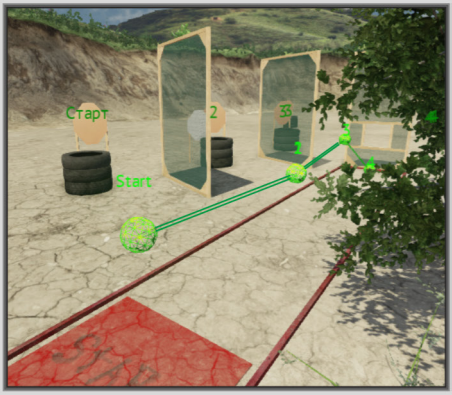
Move on stage performed buttons



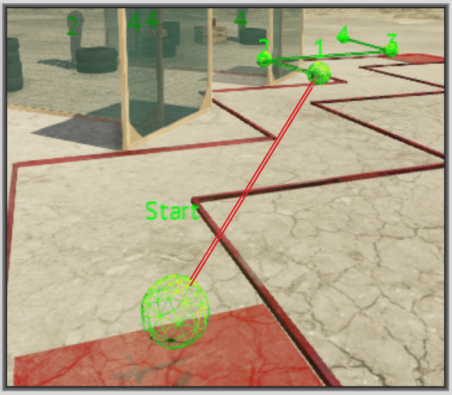
In order to create a point for shooting or just a moving point, you need: hold down the right mouse button and release, the screen will be locked, then the cursor will appear for selecting the targets with the left mouse button.

On the selected targets, the number will appear from which point the shooting will be.

In order to select fixed targets on a moving structure, you can: select the structure itself or targets on it using the preview button E.



If the plan is correct, the lines in green.



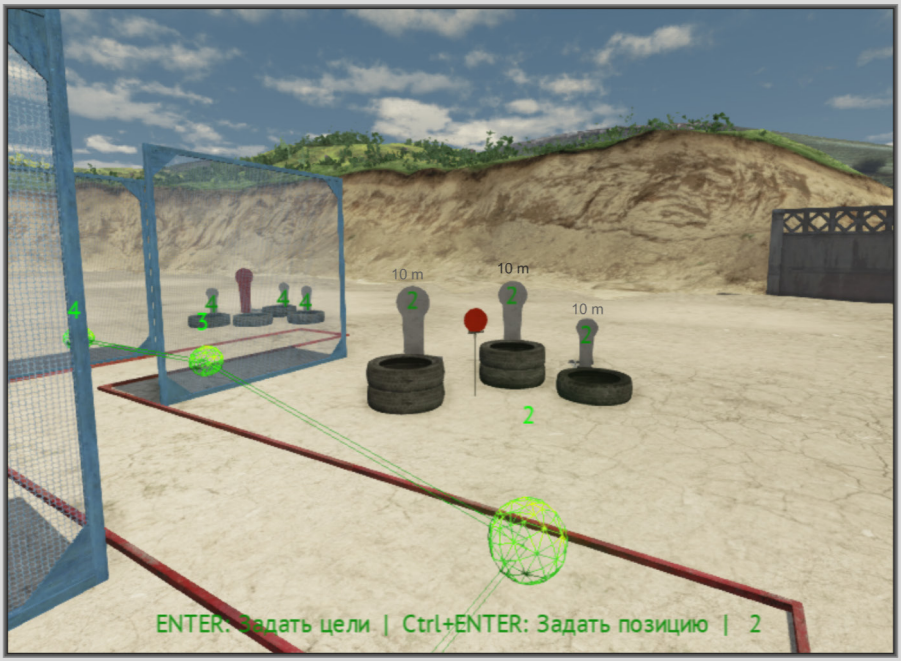
If the line between the points is redmean on the way to the next point worth the barrier or bounding line.

Game plan - Editing

At the bottom of the screen information about the nearest point, and not much keyboard shortcut.

In order to change the points set by the point, it is enough to go to the point and press the Enter button and make changes.

If you press the Delete button, the point and the set targets to it will be deleted.



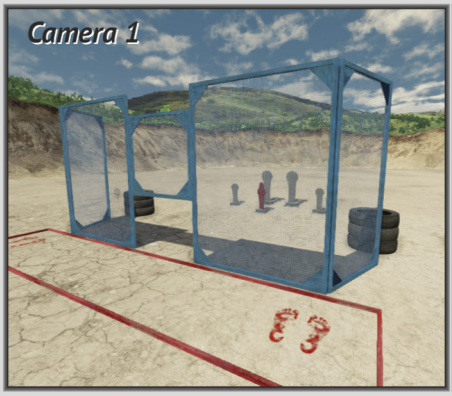
When you click Ctrl + Enter, the point itself is edited.

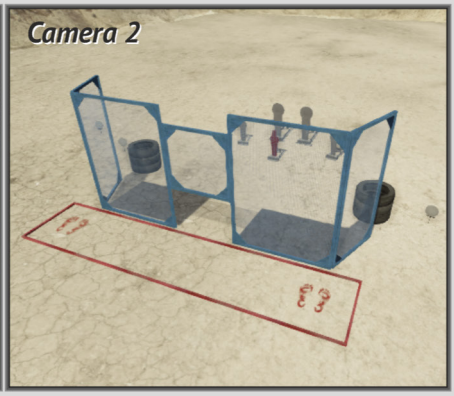
By pressing the Ctrl button, it is possible to crouch down, and with the Space button back up.

Visual camera change

There are 2 types of camera: the first is ordinary, tied to the character from the first person and the second is a flying camera.

The F5 button can change cameras.

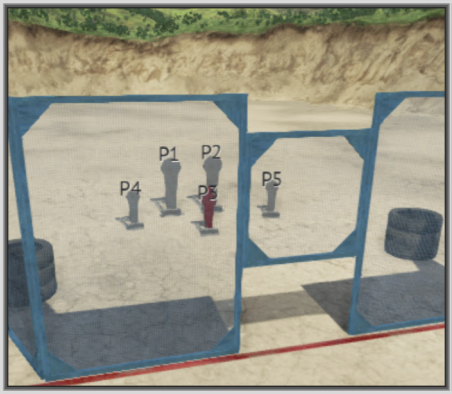


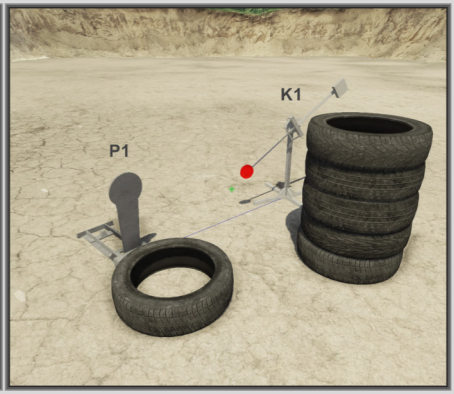


Additional functions

Button F6 change the display of numbering targets.

Button F7 is a change of color numbering targets.

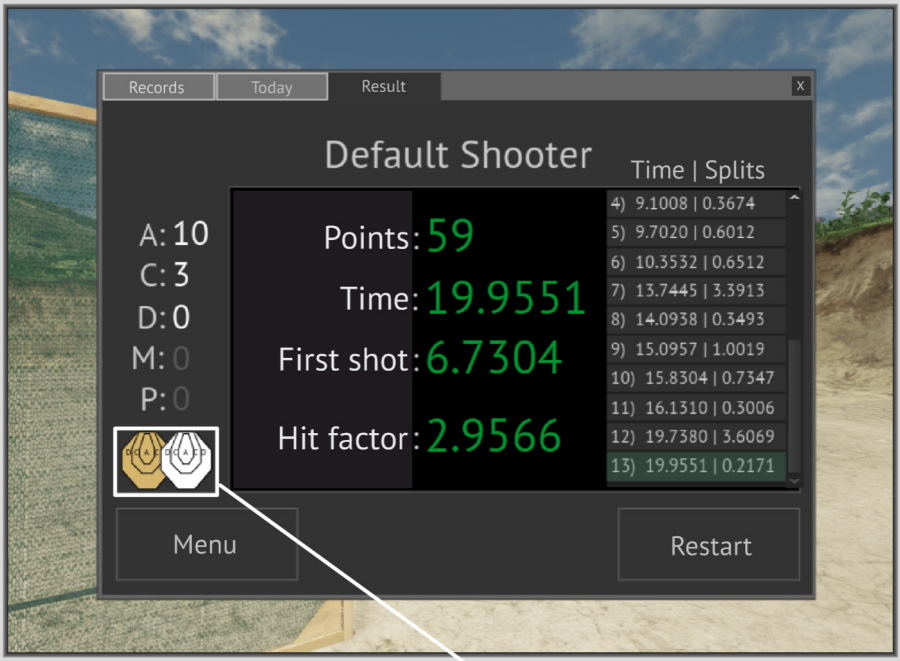




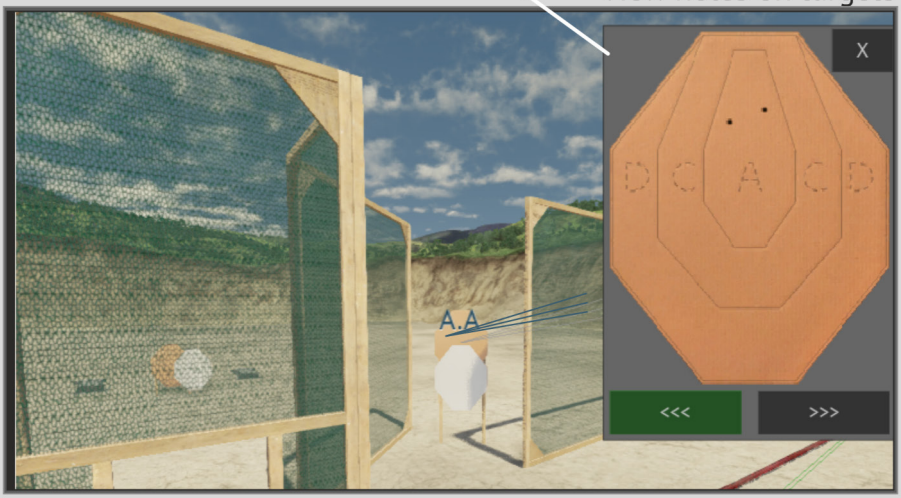
Button F8 take a screenshot.

The screenshots file is saved in (program folder \ Screenshots \ ...)

Results display



View holes on targets



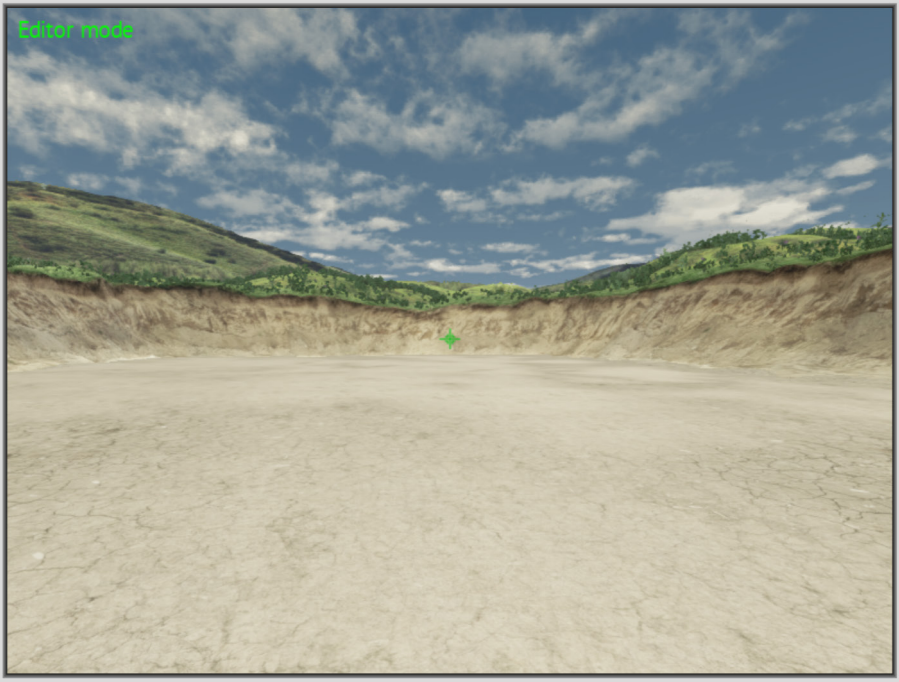
Result table

The table shows points, time, hit factor (points divided by time). In the last column, the date of the last shot and in brackets the number of attempts.

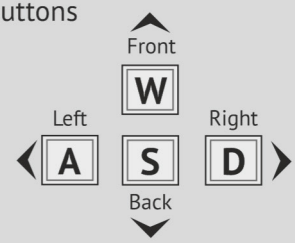
Run the stages editor

Entry and exit from the edited mode can be performed via the F2 button or through the menu.

If you are in editor mode, in the upper left corner will appear the caption is **“Edit mode”** and a ***crosshair*** appears in the center.



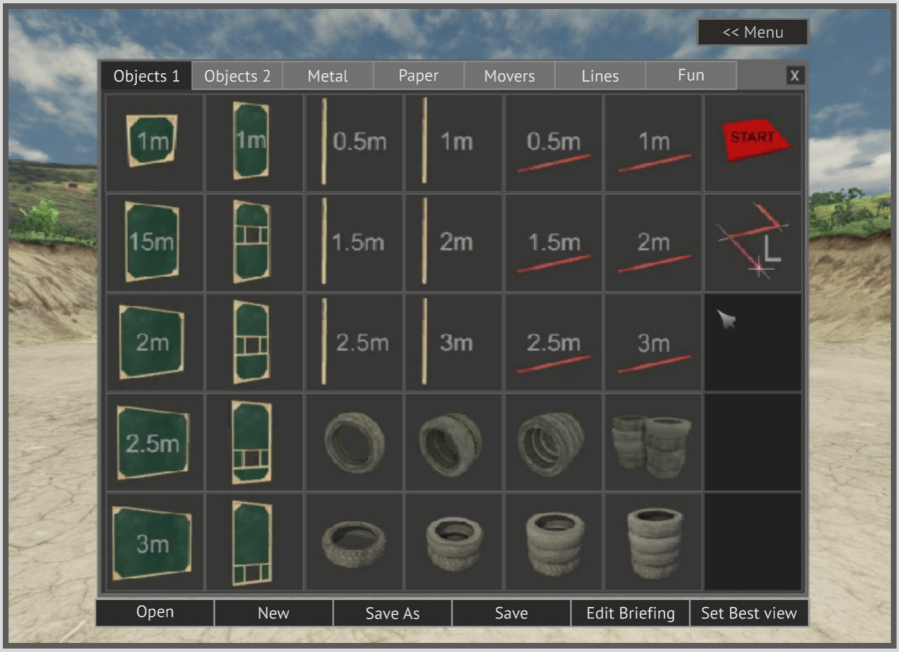
Moving around the scene is done with the buttons **W** - Fron, **A** -Laft, **S** - Back, **D** - Right.



To select objects, use left mouse button

Creating a new sages

When you press the Esc button, a menu opens with objects that can be added to the scene.



Open - A window opens to select the finished stages.

New - Clear the scene for new ideas.

Save As - A window will open where you can enter a name for the new stage and save it in the selected folder.

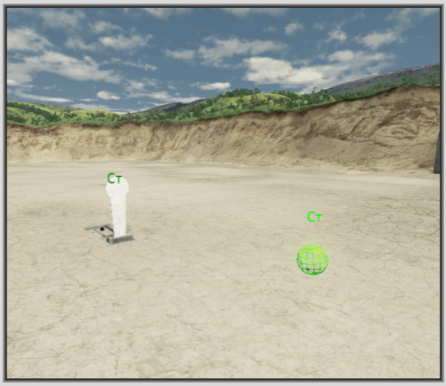
Save - Save open stage.

Edit Briefing - Opens a window for auto-generating or editing the briefing.

Set Best view - Memorizes the best camera view of the exercise (used to position the camera when choosing an exercise)

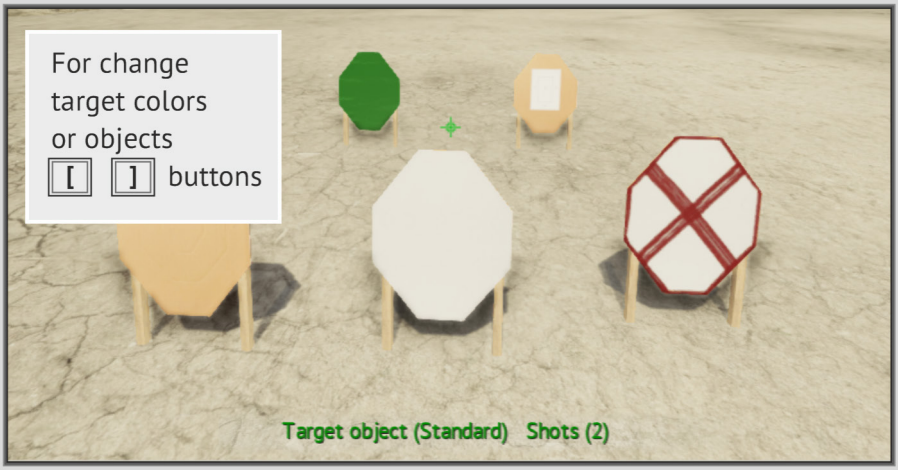
Stage Objects

To start the stage, at the level there should be at least one any target and created a game plan. To add an object, you need: with the left mouse button, select an object from the editor window and with the same button click where the cross is.



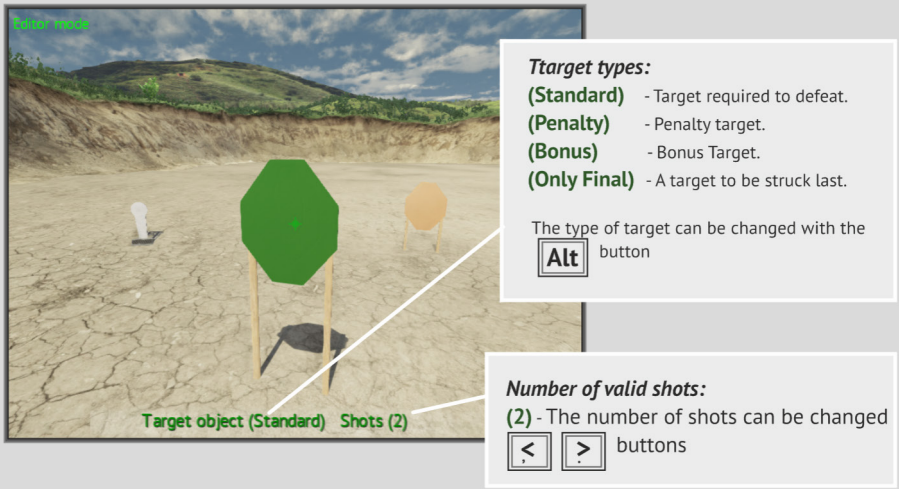
Change the fill of objects

A target selected with an A4 field will only count the result on an A4 white sheet.



Target Settings

The selected object will be green. At the bottom of the screen will appear information about the object, some objects will have settings like the target in the figure.

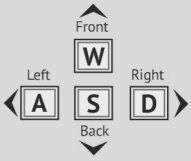


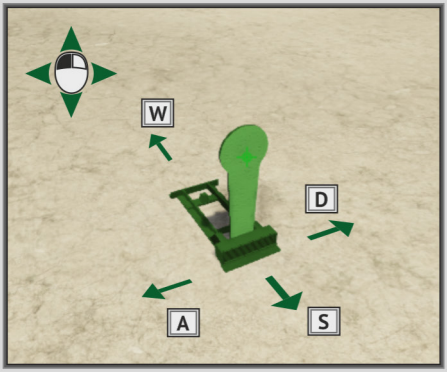
If the metal target is of the ***"popper"*** type, the score is given shots more than 1, the target will rise itself until it is will be hit as many times as specified.

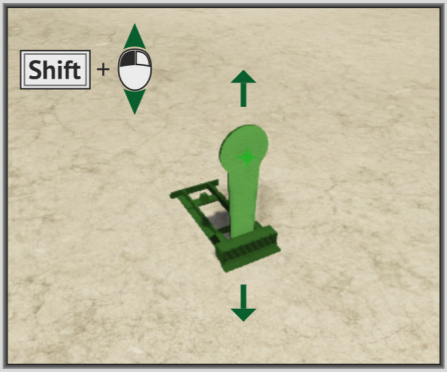
Moving objects by mouse

Selecting the desired object, or group of objects, holding the left mouse button and moving buttons on the stage the object will move on a plane with you.

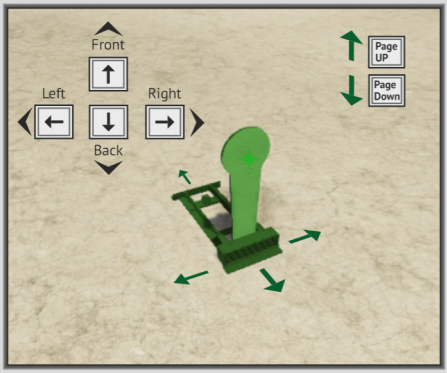
Also moving the mouse the object will move along direction of the center. Using the combination Shift + can be raised or lowered.







Moving objects by keyboard



Selecting the desired object, or group of objects by pressing buttons shooter - the object will move regarding the scene.

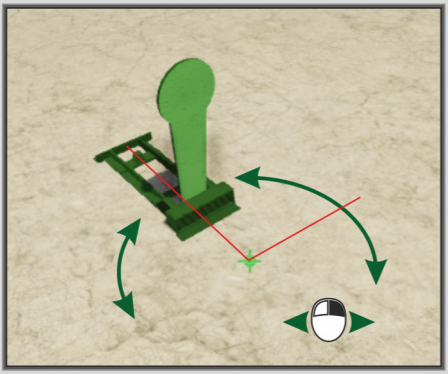
To increase, or reduce move step from each press, use – + buttons.

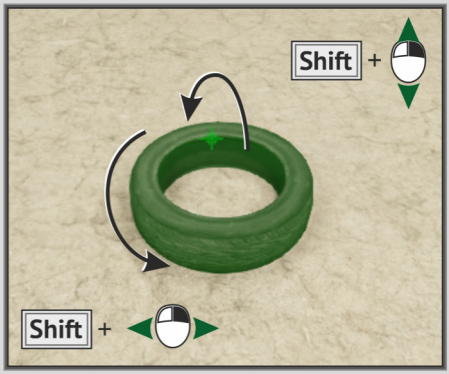
For moving objects along the vertical axis buttons are used Page UP Page Down .

The main actions are remembered. To cancel - forward or backward, - can use Ctrl + Z Ctrl + Shift + Z buttons.

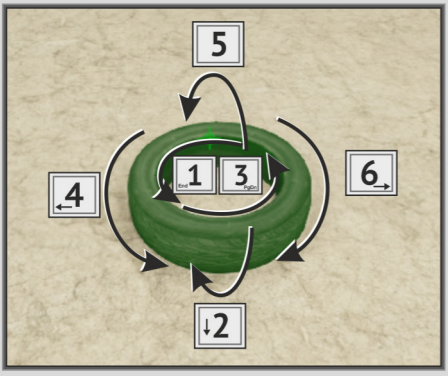
Mouse Rotation Method

Selecting the desired object, or group of objects, and after holding the right the mouse button and moving the mouse the object will be rotated on a plane relative to a point directed by the center of the crosshair. Using a combination Shift + you can rotate along the other two axes.





Keyboard Rotation Method



Selecting the desired object, or group of objects by pressing buttons

numbering, object will turn axis depending from numbers “1,2,3,4,5,6”, and the buttons “ + ” and “ - ” reduce or increase degree of rotation.

The main actions are remembered. To cancel - forward or backward, - can use Ctrl + Z Ctrl + Shift + Z buttons.

Groups of objects

Groups are a very convenient way to rotate and move multiple objects.

In order to group objects, you need to: select them
With the mouse holding Ctrl , then click: Ctrl + G

To select a group, you need: select at least one object from the group, and move the mouse wheel.

Ungroup objects - done with a shortcut: Ctrl + U Most of the objects from the editor window for convenience already grouped.

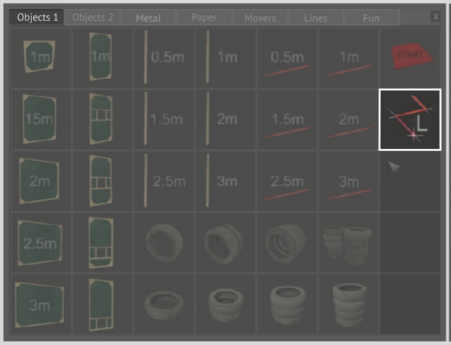
Objects can be copied by shortcut keys Ctrl + C
and paste Ctrl + V into the scene.

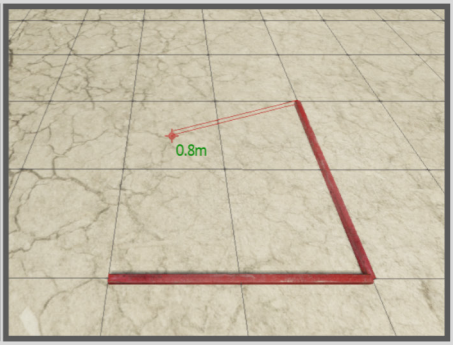
In this way, you can copy ready-made configurations from compiled stages in your new.

The main actions are remembered. To cancel - forward or backward, - can use Ctrl + Z Ctrl + Shift + Z buttons.

Penalty line

Penalty lines can be easily drawn with special tool in the section ***"Objects 1"***.



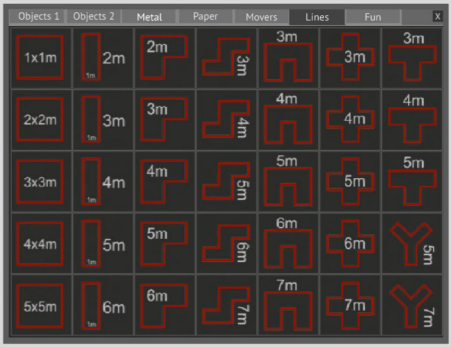


For convenience, you can turn the grid on or off with the G button. The grid step is 0.5 meters.

Holding the Ctrl button activates the snap to the grid.

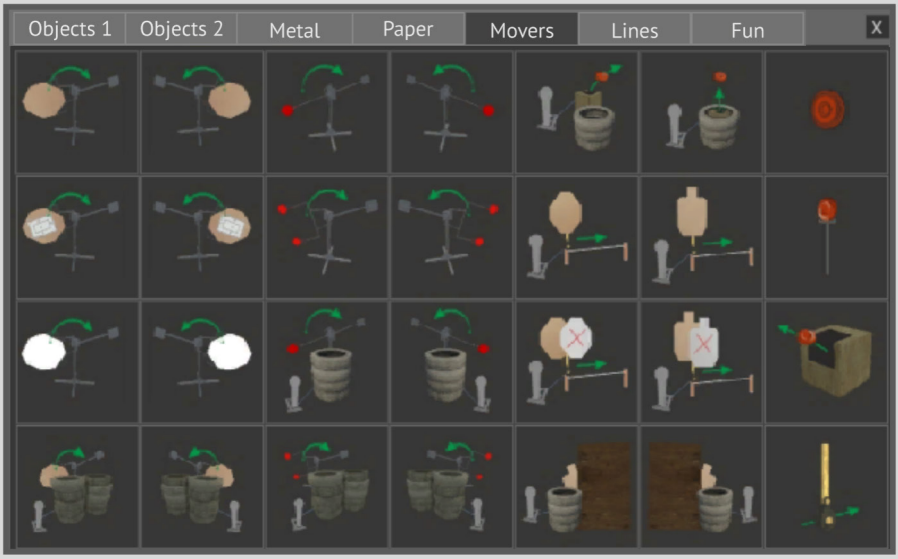
To exit the line drawing mode, press the Enter or Esc button.

Also penalty lines - can be added from the section ***"Objects 1"*** or from the ***"Lines"*** section in a ready-made form.

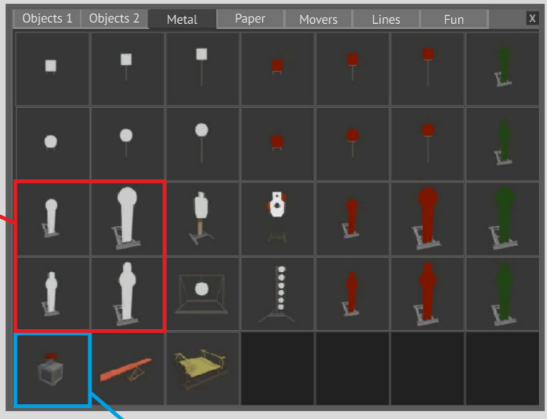


Swinging designs - “adding”

Swinging or moving design and launcher plates can be added from the “Movers” section.



Which are activated by metal falling targets or button.



Option with popper activates only after how to fall.

The option with the button activates when the shooter approaches it, ostensibly by pressing it.

Swinging designs - “activation”

In order to tie or untie the construction with the object, which will activate it, you need: select the structure and the object with the mouse holding Ctrl and click: F.

If there is an activation link, a blue line will be visible between them. During the exercise, the lines become invisible.

Activation of the structure can be tied to several objects. To preview how the design will behave, you can: click a button E.
When you press this buttons action will alternate: ***start,***
stop,
return to start

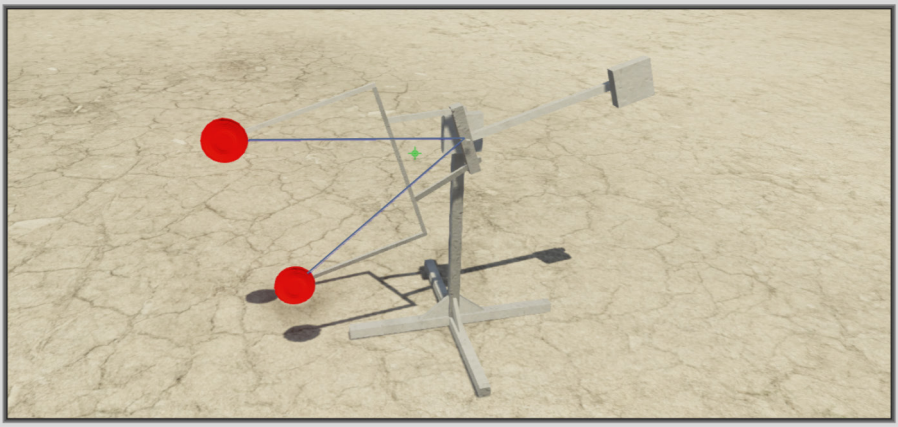
If the construction is highlighted, then the test will start only from it.

Swinging designs - “creation”

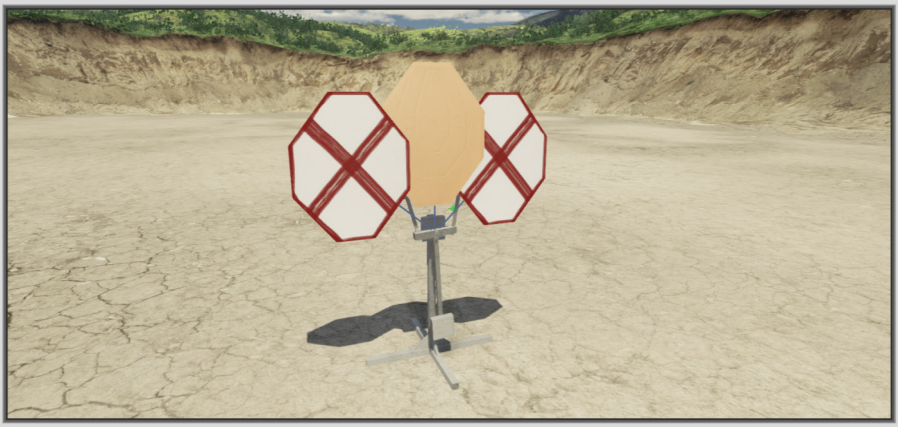
In order to detach the target from the design, you need:
select the ***“construction”*** and press the button Enter.

In order to fix the target on the structure, you need:
select the ***“target + structure”*** and press the button Enter.

If there is a connection between the objects, a blue line will appear.



For convenience, the E button can be useful for fixing the engines upright.

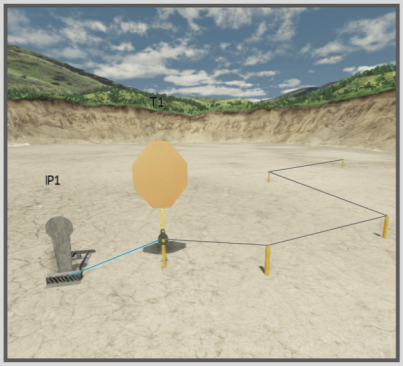


Moving designs - “creation”

In order to build a moving structure you need add a special object to the scene in the ***“Movers”*** menu and simple ones Objects for example: wooden bars or tires from the section ***“Objects 1”***

Next, select the structure and objects with the mouse, holding Ctrl So the direction of movement was planned and then press: Ctrl + Enter

When completed, the moving object will take the top position of the first motion chain object.



Settings:

Alt *Type of movement.*

(Line) *- In a straight line.*
(Zigzag 1) *- Zigzag option 1.*
(Zigzag 2) *- Zigzag option 2.*
(Zigzag 3) *- Zigzag option 3.*
(Chaotically) *- Move chaotically.*

< > Speed

L **(A->B)** - Movement from the first point to the last.
(Loop) - Infinite movement on points.

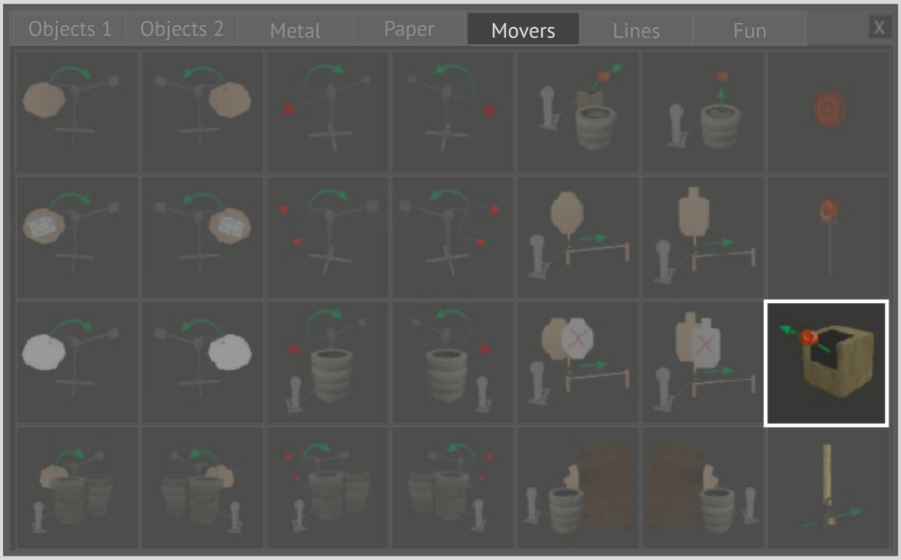
For activation, the same objects are used as have swinging designs. (See section **page 29**.)

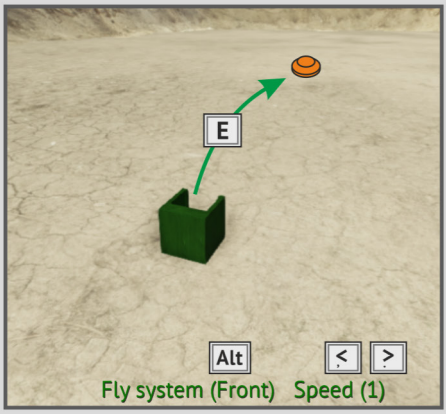
Flying ceramic plates

To start the plates, you need:

1) Add object - ***"Launch system"*** from section - ***"Movers"***

2) Bind to the object that launches it from the ***"Metal"*** section.





Settings:

Alt *Direction of movement.*

*(**Front**) - Flight forward.*
*(**Up**) - Flight up.*

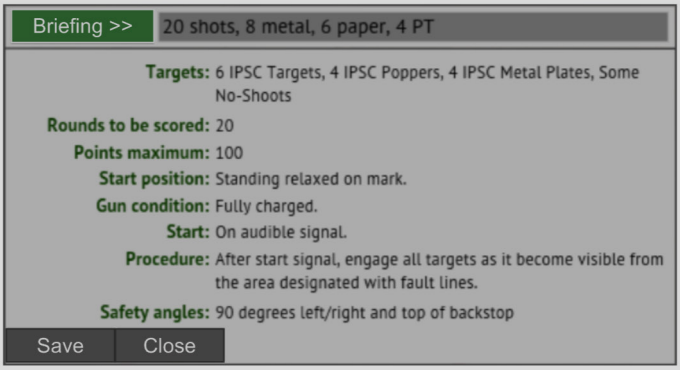
< > Speed

For preview the trajectory of the flight of plates, you can use the E button.

For activation, the same objects are used as have swinging designs. (See section **page 29.**)

Briefing - “create / edit”

To quickly create a briefing, just press the button ***“Briefing >>”*** and all sections will fill themselves.

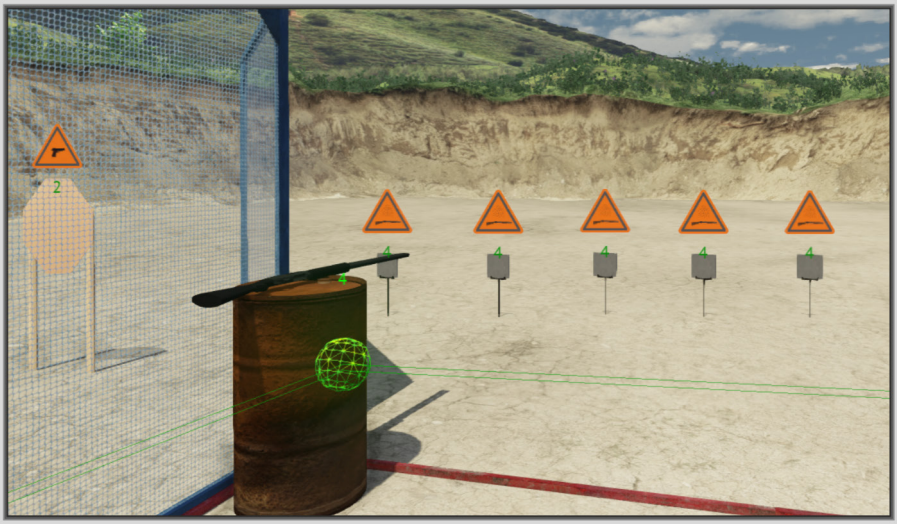


Best view

By pressing the [I] button or the ***“Set Best View”*** button in the editor window, the program will remember the specified camera position for the current stage and will take it when choosing exercises in the menu.

Combined stages - Multi-gun

To establish with which weapon the target should be hit, you need: select the target, and pressing the button [M] and select the orange icon with the required type of weapon.



Attention. When creating a game plan, you need to specify only onetarget type.

Depending on the targets specified, there will bechange weapons.

That the "Multi-gun" mode is activated it is enough to set a few in the stage types of weapons at targets.

Handgun

Rifle

Shotgun *(birdshot)*

Shotgun *(buckshot)*

Shotgun *(bullet)*

Hot keys - “Main” и “Game plan”

General

F2 — *On/Off - Editor*

F3 — *On/Off - Crosshair cursor*
(permissible at the starting level and when passing the stage)

F5 — *Camera change*

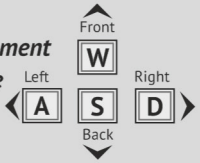
F6 — *Toggle display of target numbering*

F7 — *Target numbering color change*

F8 — *Take a screenshot of the folder “.. \ Screenshots”*

Game plan

Buttons displacement on stage



Click  *Select target*

Hold and release  *Create a new positional point*

Ctrl — *Position change - below*

Space — *Position change - above*

Esc — *Exit point edit*

M — *Setting target conditions (Multi-gun only)*

Enter — *Entry to change thr targets or delete points*

Delete — *Delete point*

Ctrl + Enter — *Entry to change the location of the point*

Hot keys - “Editor”

F2 — *On/Off - Editor*

Click  *Select object*

In the hold state  *Move object*

In the hold state  *Rotate object*

In the hold state Shift +  *Move objects vertically*

In the hold state Shift +  *Rotate the object in the other two axes*

Ctrl + G — *Group selected objects*

Ctrl + U — *Ungroup selected objects*

Ctrl + C — *Copy selected objects*

Ctrl + V — *Paste copied objects*

G — *Grid On/Off (In the hold state Ctrl Binding in mode only drawing penalty lines.)*

F — *Link Activating Objects*

E — *Check Active Objects*

Enter — *Attaching the targets with the moving or swinging objet*

Ctrl + Enter — *Set directions for moving structure*

Alt + P — *Copy the best camera view*

Alt + I — *Set the copied best camera view*

I — *Remember the best view*

Ctrl + Z — *Cancel back action*

Ctrl + Shift + Z — *Cancel actions ahead*

Hot keys - “Editor”

[ ] *Object fill*

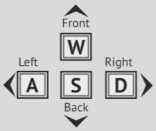
L *Change the repeat setting for the moving designs*

< , > . *Change the number of scoring shots or speed*

Alt *To change the type of the object*

– + *Buttons for changing pitch by moving arrows*

Page UP Page Down *Buttons to move objects vertically*

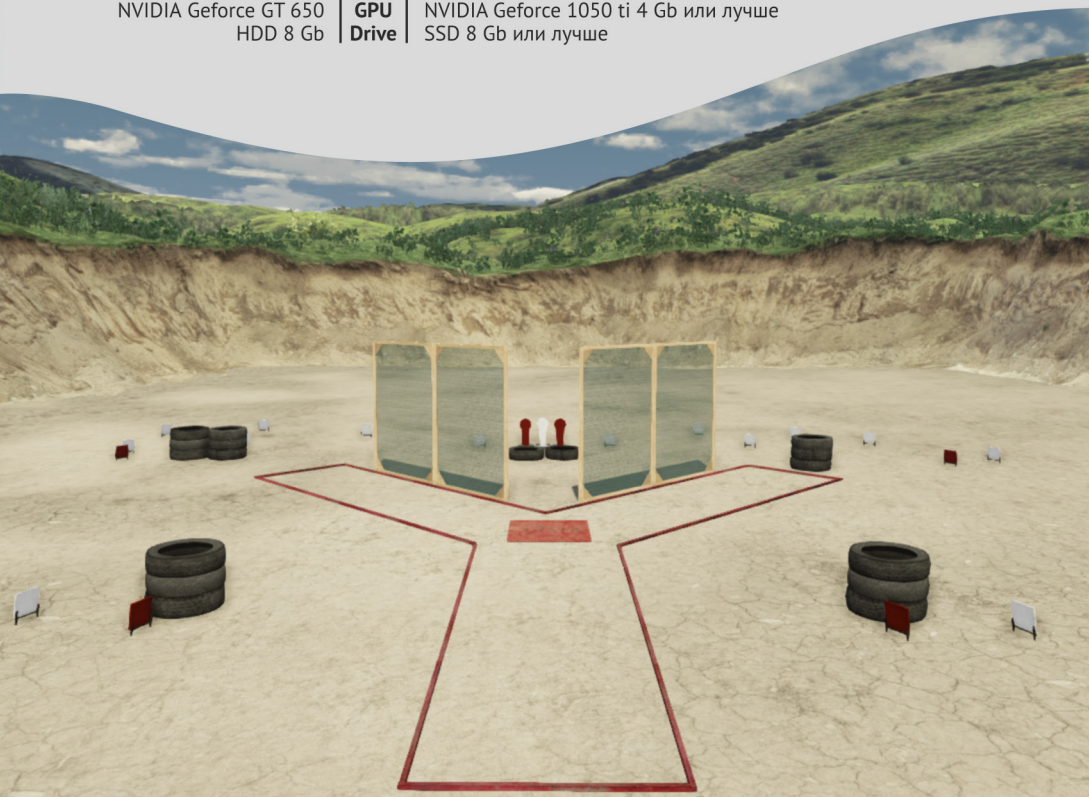


Buttons to move objects horizontally

Buttons to rotate objects and change pitch degrees

System requirements

Minimum		Recommended
Windows 7 x64	**OS**	Windows 7/10/11 x64
i3 Quad-core 2.4 ГГц	**CPU**	i5 Quad-core 2.4 Ghz или лучше
DDR4 8 Гб	**RAM**	DDR4 16 Gb или лучше
NVIDIA Geforce GT 650	**GPU**	NVIDIA Geforce 1050 ti 4 Gb или лучше
HDD 8 Gb	**Drive**	SSD 8 Gb или лучше



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