

# **MANUAL BARRIER**

for Farming Simulator 2015



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## **General Description**

Manual Barrier is designed for map creators who want to move many different objects on their map in motion, either manually or automatically.

Actually the name is deceptive because this package can much more than just a manually operated barrier.

No matter wheather a sliding door, a swinging door, a barrier or even a complex animated object must be set in motion, manually or automatic does not matter, or you will have a switchable lightsource or otherwise. For all this Manual barrier can be used.

Basically Manual Barrier can be used for any object, well, in any case fort he most ☺

And it is very diverse, everything can be combined, whether rotation and movement or animation and light, or all together, if you would like to have an old flickering light tube or a rotating light for sliding door opening. You want to grant access to a location only at a certain time? No problem, ManualBarrier can do this. Automatic yard light from 20 clock? Why not, ManualBarrier made it easy for you.

Of course, Manual Barrier is also suitable fort he multiplayer mode of FS15, each function is supported.

Fort he installation follow a description of user attributes, an example of the structure in l3D-editor scenegraph and the necessary entries in the modDesc.xml.

Basically, however, i assume that you are familiar with the Giants-editor and can edit an XML file so Manual Barrier can be used.

## Description of the User Attributes

### animationClip

- Value-Type: String
- Default value: unallocated
- Processing condition: **typeAnimated** = TRUE
- specifies the name of the clip which the animation was determined
- if the name was incorrectly specified no animation is called

### animatorIndex

- Value-Type: String
- Default value: unallocated
- Processing condition: **typeAnimated** = TRUE
- specifies the index to the animated object
- if several objects were animated in an animation clip it does not matter which is addressed by the objects on this index

### audioIndex

- Value-Type: String
- Default value: unallocated
- specified the index to an audio source which is played if an object moved or rotated

### automaticClose

- Value-Type: Float
- Default value: 18
- Value range: 0 to 23.9999
- Processing condition: **automaticMode** = TRUE
- specifies the time at which the object is to assume the closed state

### automaticMode

- Value-Type: Boolean
- Default value: FALSE
- is used to set automatic opening and closing times
- if the object is NOT set to manual opening, the object is automatic opened to the **automaticOpen** time and remains open until the **automaticClose** time
- if the object is set to manual opening so the following rules apply (semi-automatic mode)
  - + object can be opened at any time
  - + the object will automatically close at **automaticClose** time
  - + if the object is opened in the time between **automaticClose** and **automaticOpen** and the trigger was left after opening so the object closes automatically

**User Attributes**

Name: gate

**Attributes**

|                 |                           |   |
|-----------------|---------------------------|---|
| animationClip   | rollgate_rul              | X |
| animatorIndex   | 0>2 0                     | X |
| audioIndex      | 0>3                       | X |
| automaticClose  | 18                        | X |
| automaticMode   | <input type="checkbox"/>  | X |
| automaticOpen   | 7                         | X |
| automaticStrict | <input type="checkbox"/>  | X |
| flickerMode     | <input type="checkbox"/>  | X |
| lightIndex      | 0>2 0 0                   | X |
| lightOnMove     | <input type="checkbox"/>  | X |
| manualBarrierId | 1                         | X |
| manualOpen      | <input type="checkbox"/>  | X |
| maxX            | 0                         | X |
| maxXAngle       | 0                         | X |
| maxY            | 0                         | X |
| maxYAngle       | 0                         | X |
| maxZ            | 0                         | X |
| maxZAngle       | 0                         | X |
| minX            | 0                         | X |
| minXAngle       | 0                         | X |
| minY            | 0                         | X |
| minYAngle       | 0                         | X |
| minZ            | 0                         | X |
| minZAngle       | 0                         | X |
| onCreate        | modOnCreate.ManualBarrier | X |
| speedScale      | 60                        | X |
| string_Close    | string_CLOSE              | X |
| string_Name     | string_DEFAULT            | X |
| string_Open     | string_OPEN               | X |
| triggerIndex    | 0>0                       | X |
| typeAnimated    | <input type="checkbox"/>  | X |
| typeBarrier     | <input type="checkbox"/>  | X |
| typeGate        | <input type="checkbox"/>  | X |
| typeLight       | <input type="checkbox"/>  | X |

## automaticOpen

- Value-Type: Float
- Default value: 7
- Value range: 0 bis 23.9999
- Processing condition: **automaticMode** = TRUE
- specifies the time at which the object is to assume the open state

## automaticStrict

- Value-Type: Boolean
- Default value: FALSE
- Processing condition: **automaticMode** = TRUE  
**manualOpen** = TRUE
- only works if the object is provided with manual opening apply rules similar to the semi-automatic mode (see **automaticMode**) except for the following changes  
+ if the **automaticClose** time reached the object is closing and can NOT be opened up again before **automaticOpen** time is reached

## flickerMode

- Value-Type: Boolean
- Default value: FALSE
- Processing condition: **typeLight** = TRUE
- the light assigned at **lightIndex** start with a flickering (like an old light tube)

## lightIndex

- Value-Type: String
- Default value: unallocated
- specifies an index to a object which can be shown and hide

## lightOnMove

- Value-Type: Boolean
- Default value: FALSE
- indicates whether an object will still appear to remain if other objects be in closing move after leaving the trigger
- if the value not set (= FALSE) the object assigned in **lightIndex** hide directly after leaving the trigger triggers direkt ausgeblendet, independent of the motion of other objects of the trigger

## manualBarrierId

- Value-Type: Integer
- Default value: 1 ( !!! )
- Value range: 1 bis 65535
- specifies the continually number of the objects was controlled by ManualBarrier scripts
- must NOT be used more than once, otherwise only the last object with the same ID can operate correctly

**User Attributes**

Name: gate

**Attributes**

|                 |                           |   |
|-----------------|---------------------------|---|
| animationClip   | rollgate_rul              | X |
| animatorIndex   | 0>2 0                     | X |
| audioIndex      | 0>3                       | X |
| automaticClose  | 18                        | X |
| automaticMode   | <input type="checkbox"/>  | X |
| automaticOpen   | 7                         | X |
| automaticStrict | <input type="checkbox"/>  | X |
| flickerMode     | <input type="checkbox"/>  | X |
| lightIndex      | 0>2 0 0                   | X |
| lightOnMove     | <input type="checkbox"/>  | X |
| manualBarrierId | 1                         | X |
| manualOpen      | <input type="checkbox"/>  | X |
| maxX            | 0                         | X |
| maxXAngle       | 0                         | X |
| maxY            | 0                         | X |
| maxYAngle       | 0                         | X |
| maxZ            | 0                         | X |
| maxZAngle       | 0                         | X |
| minX            | 0                         | X |
| minXAngle       | 0                         | X |
| minY            | 0                         | X |
| minYAngle       | 0                         | X |
| minZ            | 0                         | X |
| minZAngle       | 0                         | X |
| onCreate        | modOnCreate.ManualBarrier | X |
| speedScale      | 60                        | X |
| string_Close    | string_CLOSE              | X |
| string_Name     | string_DEFAULT            | X |
| string_Open     | string_OPEN               | X |
| triggerIndex    | 0>0                       | X |
| typeAnimated    | <input type="checkbox"/>  | X |
| typeBarrier     | <input type="checkbox"/>  | X |
| typeGate        | <input type="checkbox"/>  | X |
| typeLight       | <input type="checkbox"/>  | X |

## manualOpen

- Value-Type: Boolean
- Default value: FALSE
- specifies that the object is manually controlled
- if value = TRUE the object can be opened/turned on and closed/turned off manually

## maxX, minX, maxY, minY, maxZ, minZ

- Value-Type: Float
- Default value: 0.0
- Value range: -65535 bis 65535
- Processing condition: **typeGate** = TRUE
- **min#** specifies the default and close position of a moveable object
- **max#** specifies the highest and open position
- not all axes must be specified, only the axis that is to be moved, other axes not specified remain in their original position
- if multiple objects are moving in one trigger all must have the same start values

## maxXAngle, minXAngle

## maxYAngle, minYAngle

## maxZAngle, minZAngle

- Value-Type: Float
- Default value: 0.0
- Value range: -65535 bis 65535
- Processing condition: **typeBarrier** = TRUE
- **min#Angle** specifies the minimal rotation of the given axis and the also the close value
- **max#Angle** specifies the maximal rotation of the given axis and also the open value
- not all axes must be specified, only the axis that is to be rotated, other axes not specified remain in their positions
- if multiple objects are rotating in one trigger all must have the same start values

## onCreate

- Value-Type: ScriptCallback
- Default value: unallocated, for this function you must enter **modOnCreate.ManualBarrier**
- returns the script callback
- without this entry no object will be moved or rotated

## speedScale

- Value-Type: Float
- Default value: 60
- Value range: 1 to 65535
- specifies the speed for the movement/rotation/animation
- low values slow down, higher values accelerate the movement/rotation/animation

**User Attributes**

Name: gate

**Attributes**

| Attribute       | Value                     | Action |
|-----------------|---------------------------|--------|
| animationClip   | rollgate_rul              | X      |
| animatorIndex   | 0>2 0                     | X      |
| audioIndex      | 0>3                       | X      |
| automaticClose  | 18                        | X      |
| automaticMode   | <input type="checkbox"/>  | X      |
| automaticOpen   | 7                         | X      |
| automaticStrict | <input type="checkbox"/>  | X      |
| flickerMode     | <input type="checkbox"/>  | X      |
| lightIndex      | 0>2 0 0                   | X      |
| lightOnMove     | <input type="checkbox"/>  | X      |
| manualBarrierId | 1                         | X      |
| manualOpen      | <input type="checkbox"/>  | X      |
| maxX            | 0                         | X      |
| maxXAngle       | 0                         | X      |
| maxY            | 0                         | X      |
| maxYAngle       | 0                         | X      |
| maxZ            | 0                         | X      |
| maxZAngle       | 0                         | X      |
| minX            | 0                         | X      |
| minXAngle       | 0                         | X      |
| minY            | 0                         | X      |
| minYAngle       | 0                         | X      |
| minZ            | 0                         | X      |
| minZAngle       | 0                         | X      |
| onCreate        | modOnCreate.ManualBarrier | X      |
| speedScale      | 60                        | X      |
| string_Close    | string_CLOSE              | X      |
| string_Name     | string_DEFAULT            | X      |
| string_Open     | string_OPEN               | X      |
| triggerIndex    | 0>0                       | X      |
| typeAnimated    | <input type="checkbox"/>  | X      |
| typeBarrier     | <input type="checkbox"/>  | X      |
| typeGate        | <input type="checkbox"/>  | X      |
| typeLight       | <input type="checkbox"/>  | X      |

## string\_Close

- Value-Type: String
- Default value: string\_CLOSE (= schließen)
- sets the text variable for the closing process for the help window in the game
- values are defined in **modDesc.xml** of the map

## string\_Name

- Value-Type: String
- Default value: string\_DEFAULT (= Tor/Schranke)
- sets the text variable for the name of the object for the help window in the game
- values are defined in **modDesc.xml** of the map

## string\_Open

- Value-Type: String
- Default value: string\_OPEN (= öffnen)
- sets the text variable for the opening process for the help window in the game
- values are defined in **modDesc.xml** of the map

## triggerIndex

- Value-Type: String
- Default value: unallocated
- Specifies the index to the trigger
- If no trigger specified, the object can only work if **manualOpen** = FALSE and **automaticMode** = TRUE, otherwise the object will not perform any function

## typeAnimated

- Value-Type: Boolean
- Default value: FALSE
- specifies whether the object is an animated object and therefore contains an animation
- can be combined with all other types
- will be deactivated if no animation assigned and/or no index is found to the animated object

## typeBarrier

- Value-Type: Boolean
- Default value: FALSE
- specifies if the object is a rotatable object
- can be combined with all other types

## typeGate

- Value-Type: Boolean
- Default value: FALSE
- specifies if the object is a moveable object
- can be combined with all other types

## typeLight

- Value-Type: Boolean
- Default value: FALSE
- specifies if the object can be turned on/off
- can be combined with all other types

**User Attributes**

Name: gate

**Attributes**

| Attribute       | Value                     | Enabled                             |
|-----------------|---------------------------|-------------------------------------|
| animationClip   | rollgate_rul              | <input checked="" type="checkbox"/> |
| animatorIndex   | 0>2 0                     | <input checked="" type="checkbox"/> |
| audioIndex      | 0>3                       | <input checked="" type="checkbox"/> |
| automaticClose  | 18                        | <input checked="" type="checkbox"/> |
| automaticMode   | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| automaticOpen   | 7                         | <input checked="" type="checkbox"/> |
| automaticStrict | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| flickerMode     | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| lightIndex      | 0>2 0 0                   | <input checked="" type="checkbox"/> |
| lightOnMove     | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| manualBarrierId | 1                         | <input checked="" type="checkbox"/> |
| manualOpen      | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| maxX            | 0                         | <input checked="" type="checkbox"/> |
| maxXAngle       | 0                         | <input checked="" type="checkbox"/> |
| maxY            | 0                         | <input checked="" type="checkbox"/> |
| maxYAngle       | 0                         | <input checked="" type="checkbox"/> |
| maxZ            | 0                         | <input checked="" type="checkbox"/> |
| maxZAngle       | 0                         | <input checked="" type="checkbox"/> |
| minX            | 0                         | <input checked="" type="checkbox"/> |
| minXAngle       | 0                         | <input checked="" type="checkbox"/> |
| minY            | 0                         | <input checked="" type="checkbox"/> |
| minYAngle       | 0                         | <input checked="" type="checkbox"/> |
| minZ            | 0                         | <input checked="" type="checkbox"/> |
| minZAngle       | 0                         | <input checked="" type="checkbox"/> |
| onCreate        | modOnCreate.ManualBarrier | <input checked="" type="checkbox"/> |
| speedScale      | 60                        | <input checked="" type="checkbox"/> |
| string_Close    | string_CLOSE              | <input checked="" type="checkbox"/> |
| string_Name     | string_DEFAULT            | <input checked="" type="checkbox"/> |
| string_Open     | string_OPEN               | <input checked="" type="checkbox"/> |
| triggerIndex    | 0>0                       | <input checked="" type="checkbox"/> |
| typeAnimated    | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| typeBarrier     | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| typeGate        | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| typeLight       | <input type="checkbox"/>  | <input checked="" type="checkbox"/> |



## Explaining the structure of scenegraph

- 0>**                    **gate**
- object which contains the user attributes as well as the script call

- 0>0**                    **gate\_trigger**
- Trigger (collision object for tripping) which specified in the user attributes (triggerIndex)

- 0>0|0**                **holder**
- object containing the moved/rotating object

- 0>0|0|0**            **rollgate**
- object which should be moved (max# , min#)

- 0>1**                    **rollgate\_drive**
- Not further defined object that contributes to the optical expansion of the overall object.

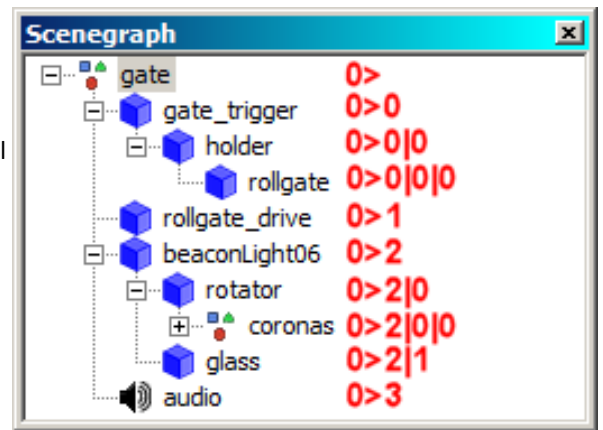
- 0>2**                    **beaconLight06**
- object which serves an animated object as a carrier

- 0>2|0**                **rotator**
- object which contains an animation (animationClip) and is specified in the user attributes (typeAnimated, animatorIndex)

- 0>2|0|0**            **coronas**
- object which is to be turned on/off (typeLight) and is specified in the user attributes (lightIndex)

- 0>2|1**                **glass**
- see 0>1

- 0>3**                    **audio**
- object which refers to the audio source to be played when a moveable/rotatable/animated object work, is specified in the user attributes (audioIndex)



## Description of the MODDESC.XML entries

### 1.1

The following lines must be added to the modDesc.xml :

```
<extraSourceFiles>
    <sourceFile filename="scripts/ManualBarrierManager.lua" />
    <sourceFile filename="scripts/ManualBarrier.lua" />
</extraSourceFiles>
```

If already an <extraSourceFiles>-section in the modDesc.xml be present are only to take the two <sourceFile>-entries so ManualBarrier works.

#### 1.1.1

Who does not want to enter the scripts in the modDesc.xml but they still want to make available on the map can also add 2 entries in the corresponding map LUA (Example: SampleModMap.lua):

```
source(Utils.getFilename("scripts/ManualBarrier.lua", baseDirectory));
source(Utils.getFilename("scripts/ManualBarrierManager.lua", baseDirectory));
```

These entries must be add to the `:new(baseDirectory, customMt)` function in the map script directly immediately before the `return self` of this function.

Example:

```
function SampleModMap:new(baseDirectory, customMt)
    local mt = customMt;
    if mt == nil then
        mt = SampleModMap_mt;
    end;
    local self = SampleModMap:superClass():new(baseDirectory, mt);

    source(Utils.getFilename("scripts/ManualBarrier.lua", baseDirectory));
    source(Utils.getFilename("scripts/ManualBarrierManager.lua", baseDirectory));

    return self;
end;
```

### 1.2

For manual controlling of the objects a key must specified in the modDesc.xml:

```
<inputBindings>
    <input name="OPEN_GATE" category="VEHICLE ONFOOT" key1="KEY_o" />
</inputBindings>
```

The name "OPEN\_GATE" is essential to maintain since it is explicitly requested by the script, otherwise errors in the log-file appear.

**Also applies here:** If already an <inputBindings>-section in the modDesc.xml be present are only to take the <input>-entry.



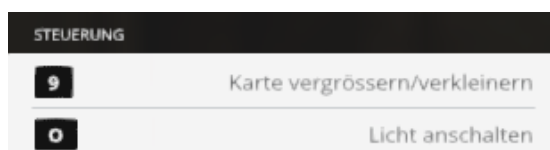
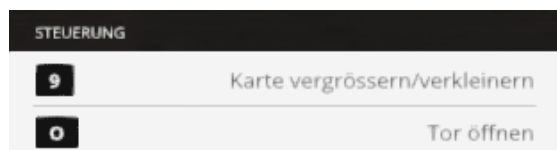
## 1.3

Standard text entries for the included sample objects and default text attributes of the script to be added in the L10N section in the modDesc.xml :

</l10n>

```
<text name="string_OPEN"><en>open</en><de>öffnen</de></text>
<text name="string_CLOSE"><en>close</en><de>schließen</de></text>
<text name="string_ON"><en>switch on</en><de>anschalten</de></text>
<text name="string_OFF"><en>switch off</en><de>ausschalten</de></text>
<text name="string_BARRIER"><en>barrier</en><de>Schranke</de></text>
<text name="string_GATE"><en>gate</en><de>Tor</de></text>
<text name="string_LIGHT"><en>light</en><de>Licht</de></text>
<text name="string_DEFAULT"><en>gate/barrier</en><de>Tor/Schranke</de></text>
<text name="OPEN_GATE"><en>Open/close gate/door</en><de>Tor/Schranke öffnen/schließen</de></text>
```

</l10n>



These are default values, own entries can be added if you need an explicit name, for example you will name an object wooden gate and not only gate you add this line:

```
<text name="string_WOODGATE"><en>wooden gate</en><de>Holztor</de></text>
```

Next you change the user attribute in the I3D-editor named **string\_Name** to: string\_WOODGATE (Default: string\_DEFAULT) and now you can see in the game not the default „gate/barrier open“ but „wooden gate open“.

**Also applies here:** If already an <l10n>-section in the modDesc.xml be present are only to take all the <text>-entries.

## Hints

Who wants to make an animated object simultaneously run with a rotating or moving object might find the following formulas useful.

The time to run an animation just in time while an object moves is calculated as follows:

$$\text{animationDuration} = (\text{max\#} - \text{min\#}) * \text{speedScale} * 15$$

The time to run an animation just in time while an object rotates is calculated as follows:

$$\text{animationDuration} = (\text{max\#Angle} - \text{min\#Angle}) * \text{speedScale} / 2$$

When calculating the rotation there are unfortunately between the opening and closing sometimes a difference in my tests came about differences of partially 10 to 40 milliseconds. This can result in precisely coordinated processes now and then to delays between rotation and animation.

A guideline that I have found here: the lower the **speedScale** is the smaller the differences.

Have fun

Blacky\_BPG