Introduction
Basic rules and Shortcuts

This Tutorial will bring you a step closer to have basic skills of map and missiondesign with GEM Editor for Faces of War. Basically the tool is devided into two main editors: Mapeditor and Missioneditor.
Mapeditor allows you to create your own landscape and every detail on it. Missioneditor will "use" this created landscape and add life to it. So you can devide them by saying everything you can drive and walk with is part of Missioneditor, aswell as every effect and event, everything else belongs to Mapeditor.

It is important to seperate both Editors in this way, for smooth and bugfree playing.

I also want to add that this tutorial is not reread by Bestway and may contain errors, if you so let us or Bestway know!

The Editor is running realtime, that means while you are creating your map, you can play on it and if you destroy something the map will be changed. But AI won't interact with each other, until you start you mission by clicking on the "start" button on the right corner. Your mission can be stopped whenever you are clicking on the "finish" button which will be at the same place as the "start" button is.

Notice: Landscape can't be edited while Mission is loaded, to do so unload your current Mission.

Basic options

F1	standart gameview, use it when you want to take control over units or if you want to test the map.
F2	Mapeditor
F3	Missioneditor
F3+F6	Environment Editor
F3+F9	Mission options

Make sure to save map and mission seperated, by clicking F2 or F3 and ESC, selecting save.

Hotkeys

CTRL+T	opens tag window for adding tags to entities
ALT+T	switching tags on and off
ALT+I	switching MID's of enities on and off
ALT+A	switching obstacles on and off
ALT+W	switching through wireframes
ALT+H	switching through visible heightmap, land heightmap, terrain heightmap, path planner heighmap
ALT+P	switching ai chosen waypoints on and off
ALT+X	exit Editor
CTRL+F	searching for actor or waypoint using MID
ALT+Z	undo, redo window
ALT+F	fog of war on and off

button over tabulater is console (^)

Enjoy the Tutorial!

Part I Mapeditor
Select Mapeditor by pressing F2

Entities   Here you will find all gameobjects. Contruction is main folder for all stuff in human built objects you will find everything there except foliage and player/tank models. Use "c" and "x" to rotate objects
Do not use human or vehicle entities in mapeditor!   -fauna -human -vehicle

Land   All highmap related settings

Heights	Colors
Polygons	Textures
Terrains	Grass

Heights,   let adjust you the highmap. Use left mouse button to higher altitude, right mousebutton to lower. "+" "-" on numblock let adjust you the size of your brush. Slow, Fast, Soft, Sharp are logical to their meaning. Press shift for constant high.

Colors,   let you adjust the color of the textur painted on the highmap.

Polygons,   let you add polygons to the highmap or erase them Useful for seizing map after creating. Left mouse button add, vice versa.

Textures,   let you draw textures on the highmap. It's a two layer system. To draw smooth textures, use layer A as basic and draw layer B over it. If you want to paint a layer C on B, create a 2nd texture set with B as layer 2 and C as layer 1. Now you will be able to draw smooth textures on layer B with C

Terrains,   let you draw terrain type on your highmap. Use Texture fill to auto calculate terrains.

Grass,   lets you paint grass on textures. Left mouse button to add grass.

Clip,   You can set the clipping for you map in this menue. Violet line is standing for the whole map. Blue line, is camera clipping, you can set the moving area for cameras there. Yellow line is end of playable zone, player won't be able to go over yellow line. Green line shows the end of fog, player won't see any further. You can adjust all lines by clicking with left mouse button and drag them to another position.

min, max distance and angle are camera settings, leave them like auto suggests, if you want official settings.

Edifice,   You can set there, which buildings should have no roof showing, when player enters it. Right mouse button into edifices window and you can add a new edifice group. Now select one or more buildings which should remove their roofs when player enters. If you add multiple houses, all roofes of them will get removed when player enters only one of them. If you want to avoid this, create a new edifice group for each building.

Part II Missioneditor
Select Missioneditor by pressing F3

View
Here you can move the camera precisly with buttons and toggle game speed.
Useful for creating minimaps

Entity
That's the right place to choose your mission enitities, for example enemy soldiers and vehicles
Only place actors through this option and no buildings.
Actual player can be switched through num block 0-9. Player should be Player 0, shown by grey color.

Squads
Here you can create squads. To do so, click right mouse button on your squad box and add new squad.
Than go back to entity mode and select the soldiers you want to add into squad. After that switch back
to your Squads option and click right mouse button on actors in properties and add them.

Waypoints
What you see here is a very powerful feature of FoW, you will use it very often for each Singleplayer
mission. I will explain you how to create such a nice smiley like I did and what it means.

Step one: You can create a waypoint by clicking on add and afterwards on the map.

Groups are useful to have a better overview. I recommend
Creating different groups for allies and enemies.

Step two: Press and hold shift to link waypoints, or use
the link command in your waypoint window.

Step three: Creating waypoints for your needs. To do so you
have to think about what you want. Waypoint 0
and 1 in my example will be just one spot where
a vehicle can move.
Waypoint 2-6 will be a route where a vehicle
will drive.
Waypoint 7 to 17 will be a circle where a
vehicle or human will patrol along.
Step four: Try to recreate this smiley!

Zones
With this feature you can create zones, which are necessary for some triggers.
You can create a circle or a poly. Circle is very simple and selfexplaining. Here I have a picture
of a poly construct. Just add a poly and add new points to it.

Try to recreate my image!

But notice: when the poly shows up red, it won't work.
No poly points are allowed which fall into others.
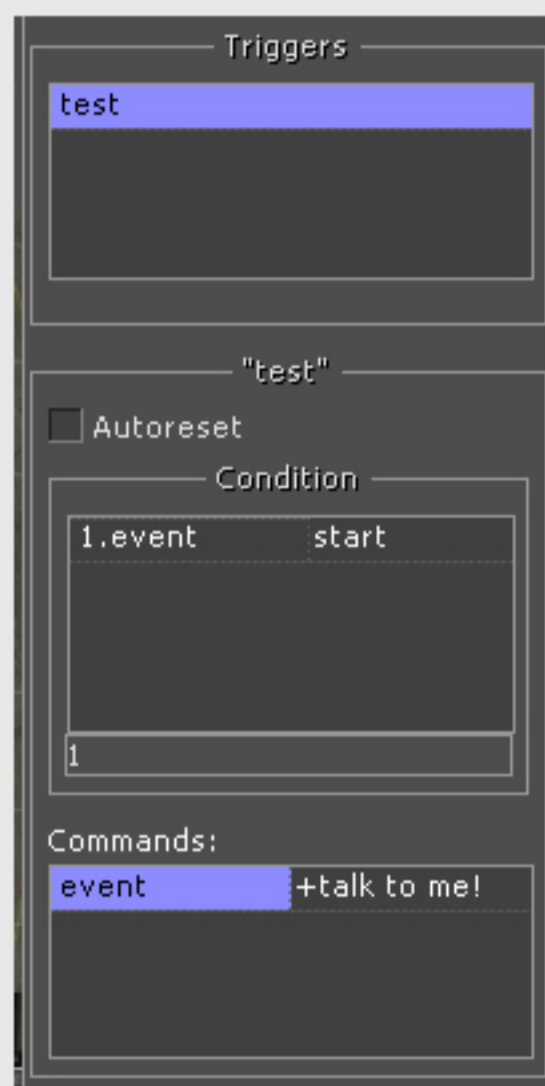
Part II Missioneditor
Select Missioneditor by pressing F3

Trigger

The Trigger window is the most powerful feature for FoW. Here you are going to script the hell out of this game! And I will teach you!
Triggers are seperated in conditions and commands. You als can say if than do xy.
The condition will say whenever a command is going to be fullfilled or started.

Triggers

test

"test"

☐ Autoreset

Condition

1.event   start

1

Commands:

event   +talk to me!

Step one: Save map! After that create a trigger called "test".

Step two: Create an event condition and create an event called "start".

Step three: Create an event command called "talk to me!"

What have you done?
When event "start" is set, event "talk to me" will launch!
So what? Let's go on :)

Step four: Create a trigger called "start" enter !NO! condition

Step five: Create an event command called "start" and give it delay of 2 sec.

What have you done?
You left condition open for trigger "start", which means command will be launched with gamestart. You also linked it to trigger "test" So event "start" will run with gamestart but with delay of 2 secs and Command of trigger "test" will be launched together with event "start".

Step six: Go to Entity menue and place a soldier, afterwards press ALT+I so you will see the MID of the Soldier.

Step seven: Create a new trigger called "speak" set condition as event called "talk to me!" by choosing the existing event.
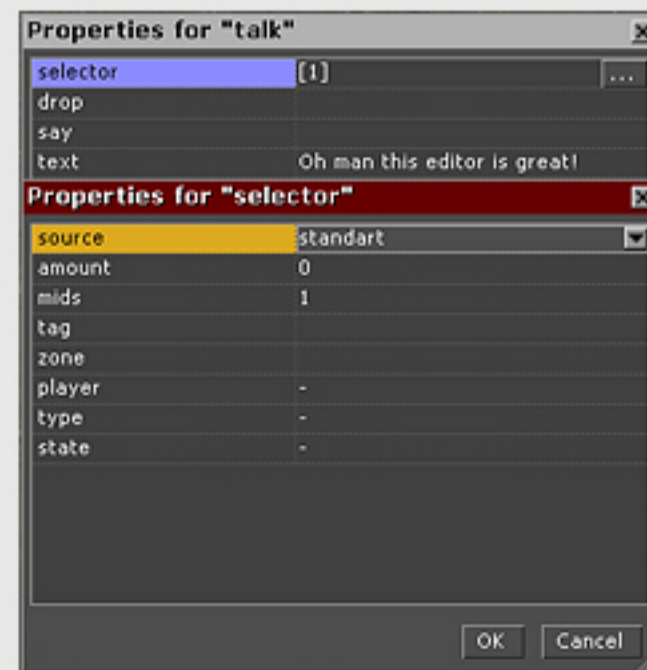
Step eight: Create command actor/talk and enter in "Selector" the MID of your soldier. Afterwards enter a text in the text field.

Now you made this soldier talk when event "talk to me!" is reached!

RESULT

If you have filled the properties for talk this way, you can save the mission and press at start. Your soldier will talk!

Properties for "talk"

selector	[1]	...
drop		
say		
text	Oh man this editor is great!	

Properties for "selector"

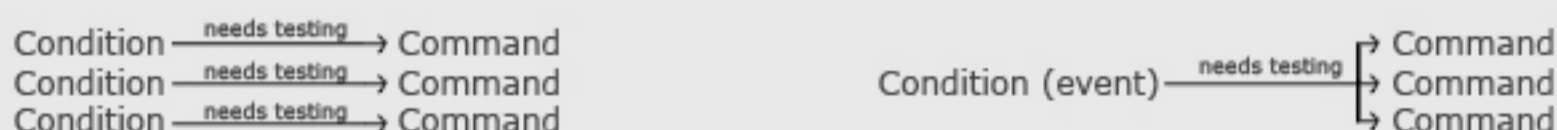| source	standart	▼
amount	0	
mids	1	
tag		
zone		
player	-	
type	-	
state	-	

OK   Cancel

Part II Missioneditor

Select Missioneditor by pressing F3

What is the sense of using events, what do they do?
Events will help to make your map bugproof and will help to save yourself work. I'll explain it through this scheme:

Condition —needs testing→ Command
Condition —needs testing→ Command
Condition —needs testing→ Command

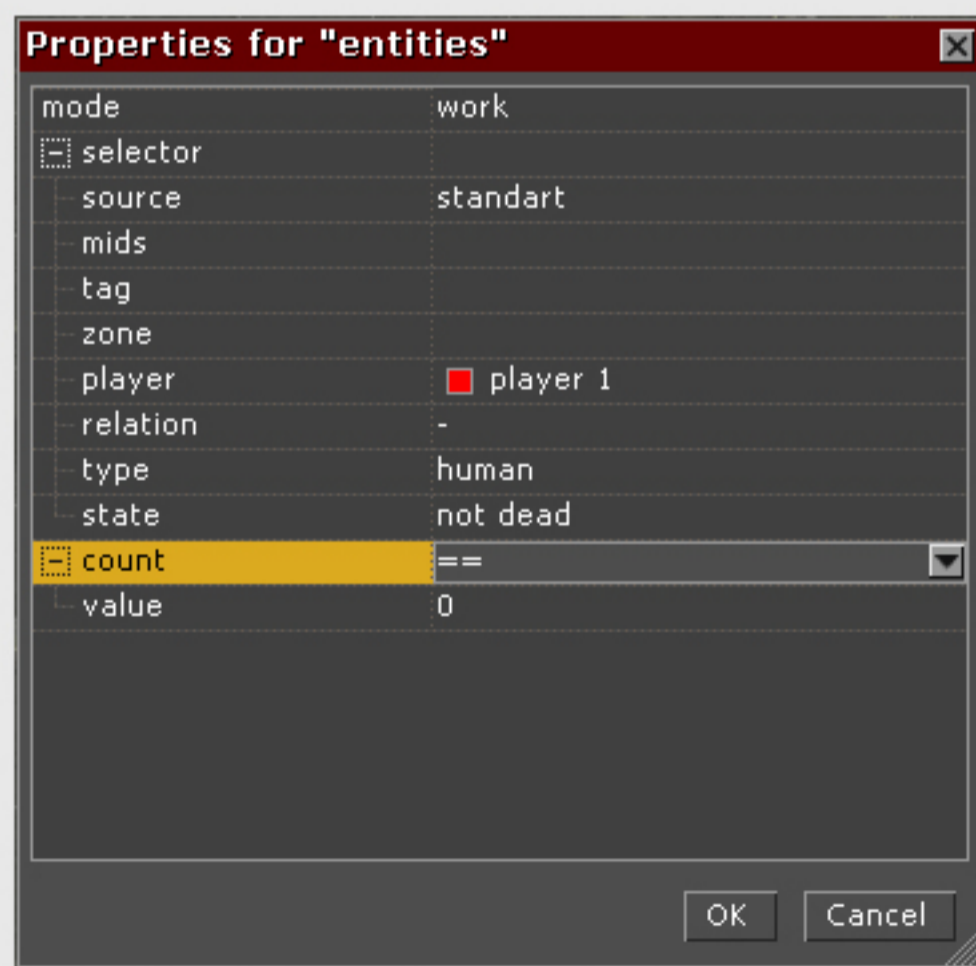Condition (event) —needs testing→ Command / Command / Command

What you see here is, that you need just one condition to have multiple commands, by not rewriting the same command over and over again. If you want to change something , you just have to edit one trigger instead of three triggers. That means that your script is much more flexible and you can easily change and test stuff without a lot of time consumption. It also allows you to add much more complexity to your scripts, as events give you a good overview.

Let's learn something very usable for the beginning. How to make the player win in your mission.

First create a trigger called mission/win, using "/" will automatically create a subfolder in you mission script.
Than add a new "entities" condition.
Now a window will pop up and you should do following:

Properties for "entities"

mode	work
selector	
source	standart
mids	
tag	
zone	
player	🟥 player 1
relation	-
type	human
state	not dead
count	==
value	0

OK   Cancel

If all units of AI are dead, player shall win the mission. For that you will enter player 1 in player. Player 1 should be always used for enemy AI. Now you define what of player 1 is ment, by entering human as type.
Now it gets a bit fuzzy and you need some huge brainpower but I still think it's a conflict of both brainsides, so even that won't help :)
What you want is that Player 0 wins when all units of Player 1 are dead. But now you don't type in state dead, because that makes you to define exact number. And I guess you don't want to count every single soldier on your map ;)
So we are going to enter not dead == 0.
What means, if no human of Player 1 is not dead, condition is fullfilled. In other words if noone of Player 1 units are alive your condition is fullfilled.
Ofcourse there are also other ways to say the same:
not dead < 1.
Which means that if less than 1 humans of Player 1 are not dead, condition is fullfilled.

Kind of irritating, isn't it? :P
But it gives you an unlimited freedom of creating conditions and that's worth it.

Now you press ok and need to define a command, which is very simple:
scene/gameover   set game to "won"

After you have done everything, you can make this script better. As it's a bad task to kill all enemies on the whole map. Create a zone, which you want to have cleared by enemies. Call it "Kill all", afterwards enter this zone in your entities properties. Now your game is won when you killed all enemies in this zone!
Congratulations! You made your first complete mission :)

Part II Missioneditor
Select Missioneditor by pressing F3

As you see it's a big job to learn all that scripting and this tutorial won't and can't teach you everything, not even most of it. If it's a too big job for you, you may try to do Multiplayer maps and use existing missions for them. That's really easy. Otherwise if you are a fighter I will go on teaching you some basics!

Defining a group of actors.
You learned how to let a specific soldiers speak through his MID, if you want to let many soldiers do something, it would a timekiller to write down every MID for every trigger.
For making this easier you can give every entity a tag. Do following:
Place two soldiers in entity mode. You will see that both have different MIDs (ALT+I), now press (ALT+T) and you can see all tags. For now you won't see anything, cause you didn't set any tags yet.

To add tags, you will have to select the soldiers in entity mode and press CTRL+T.
Now a tag window opens and you can add a new tag to those soldiers. Type in "patrol".

Afterwards create a few waypoints linked to each other.

Your next step is to create a new trigger. Don't fill something into Condition.
Than create a waypoint script in your Command line.

in "who" select "actor" and than type "patrol" into the "tag" line. Press ok and have a look which number your first waypoint has. In our example waypoint "0".
Open the properties of the waypoint script again and type into waypoint "0".

You are ready to test you soldiers walking along you waypoint route!
Good job!

Some tags are autocreated if something happens to a specific entity. For example if a house breaks into peaces, you will find the tags "crushed". And if a tank is blown up you will find the tag "destroyed". It's important for some triggers, for example if something should happen if a tank is destroyed. You than, will need it's MID's and the tag it gets when it is destroyed.

Camera   Your tool to create your own ingame movies! Add a new camera and than add a new keyframe. The engine will autocalculate the moving of the camera between the keyframes. Update button will give the keyframe current camera view. Add multiple keyframes and set the time between them. Press on preview, and voilá!

Covers   This feature lets you edit the autocalculated covers for the game. Add button is for adding new covers. Select an existing cover an click with left mouse button on it. You can give this cover a specific name, so you can link it to some of your triggers!

# Part III Workflow
Learn how to work effective

As I guess you don't want to work many hours senseless on your maps. I'm going to teach you how you will fasten your work speed. Below you see a Treegroup out of 4 different trees. The next image shows you the treegroup 20 seconds later.

No, I can't place every single tree this fast, but with some shortcuts you will be able to create a huge forest within seconds.
Place an individual tree group on your map and select them.
Press ctrl+c and you will copy them.
Press ctrl+v and paste them on the place you wish. Now you have a cloned Treegroup, which doesn't look too individual.
Press "s" and hold you right mouse button the scale a tree or use "c" button to turn the whole group of trees, if you want to turn all trees around their own axis, press "z" button and hold it.
Not every tree in nature is growing stright into the sky, some may fallen down or hang over a river. Press "x" key and flip the tree around like using a joystick. You can now make a same tree look different to the others.

But beware of creating big forests! If they get in flames it will slow down nearly every PC. But for testing a nuke within a big forest, it will be funny!
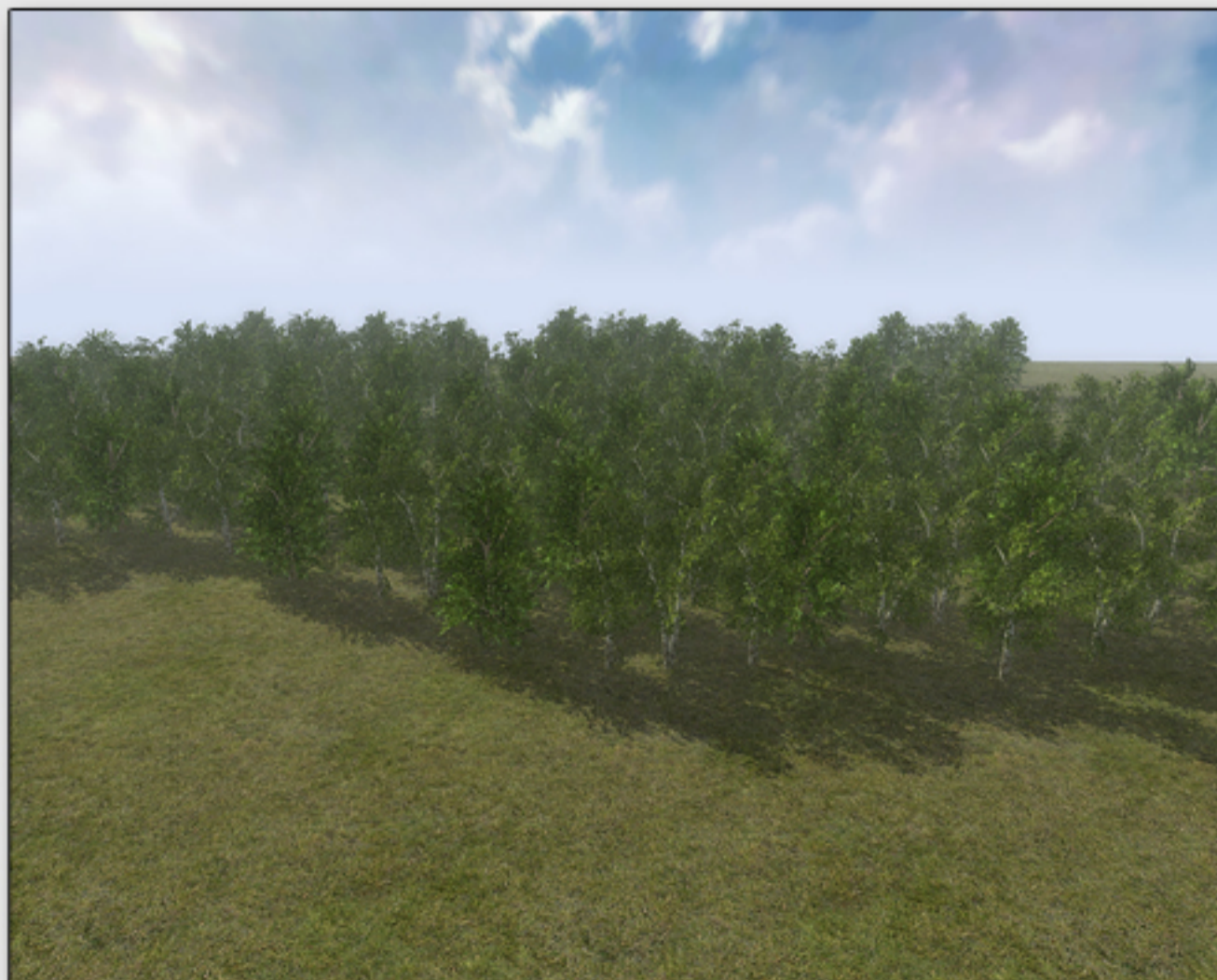
Ofcourse all that works with every object in the Faces of War gameworld.

If you want to create battlelandscapes Just destroy the gameobjects in the F1 gameview or use just the damage service in your F3 mode.
Don't use the damaged entities in the entities folders, they won't have collisions and other gameobjects can walk through them.

If you create a gamescene make sure AI can work with it. If you want to make a trench battle, make sure the trenches are in reach to AI field of view otherwise they won't fight each other.

Testing and balancing is the most essential work of mapdesign. Think about what makes you to have fun and why do you have fun. Than think about how to transfer this fun to others. You just can create good maps, if you know what's good and why it's good. The earlier you think about it, the less changes have to be done!