

Documentation

Controlled Spawn & Waypoint Randomizr Script (CSWR)

Last update: v2

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What is this script?

Controlled Spawn and Waypoint Randomizr (CSWR) is a simple and limited spawn and waypoints solution where groups of units and ground vehicles will be randomized through marks in your mission, moving among them forever in life.

Can I use it for multiplayer missions?

Yes, CSWR was mainly built for multiplayer missions such as PvP, Coop/PvE, TvT.

Can I use it on Hosted and Dedicated servers?

Yes, the script was built for both server types, mainly dedicated ones.

Can I use it for single-player missions?

Yes.

Is it compatible with ACE?

Yes.

Is it compatible with content mods like RHS or CUP?

Yes! You can call whatever classnames of units and vehicles in

fn_CSWR_population.sqf file.

Can I spawn through CSWR air or nautical vehicles too?

Not tested with nautical vehicles, but for sure it won't work properly if you spawn helicopters or planes through CSWR script.

How to just run the script for a first look?

1. Go to <https://steamcommunity.com/sharedfiles/filedetails/?id=2740912514>
2. Subscribe and wait for Steam to download it;
3. Open Arma 3, go to Multiplayer > Server browser > Host server > click Host Server button;
4. Select "Stratis" map and, after that, select "CONTROLLED SPAWN AND WAYPOINTS RANDOMIZR";
5. Play.

Important: if you want to apply this script in your own missions, [check this out](#).

How to install the script in my own mission? ★★ ★

1. Go to:
<https://github.com/aldolammel/Arma-3-Controlled-Spawn-And-Waypoints-Randomizr-Script>
2. Download the zip and open it;
3. In zip, find the folder “CSWRandomizr” and copy it to your mission folder root:
DRIVE:\Users\yourName\Documents\Arma 3\yourProfile\missions\yourMission\
4. In the mission folder root, if you don't have a “description.ext” file, create one and there add the code down below:

```
class cfgFunctions
{
    // CONTROLLED SPAWN AND WAYPOINTS RANDOMIZR
    #include "CSWRandomizr\THY_functions.hpp"
};
```

5. Still in your mission folder, open [fn_CSWR_population.sqf](#) file and perform all customs you need.

How do I create a faction team?

In Arma 3, which Faction is built by groups that are built by units (soldiers/people).

In CSWR is the same logic, but we will create all of it through a file:

Path: `\Your_Mission_Folder\CSWRandomizr\fn_CSWR_population.sqf`

1) Defining the factions to spawn:

At first, define what faction(s) you wanna spawn in your mission:

```
// EDITOR'S OPTIONS:  
  
CSWR_debug = false;  
CSWR_spawnBlu = true;  
CSWR_spawnOp = false;  
CSWR_spawnInd = false;  
CSWR_spawnCiv = true;
```

2) Defining the group's size and specialties:

After that, the next step is to define with soldier classes and vehicles that must be part of the faction:

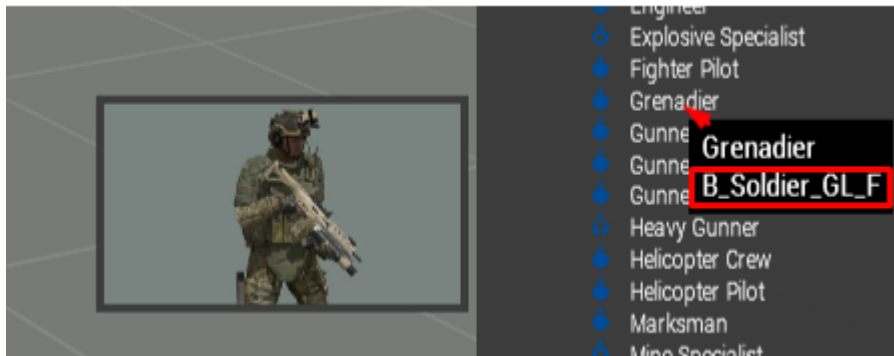
```
// DEFINING GROUPS: BLUFOR  
// Define the number of soldiers and who is who in each type of group.  
  
// Vehicles  
private _bluVehLight = ["B_G_Offroad_01_armed_F"];  
private _bluVehRegular = ["B_MRAP_01_hmg_F"];  
private _bluVehHeavy = ["B_MBT_01_TUSK_F"];  
  
// Soldiers  
private _bluSquadLight = ["B_Soldier_TL_F", "B_Soldier_F"];  
private _bluSquadRegular = ["B_Soldier_TL_F", "B_Soldier_F", "B_Soldier_F", "B_soldier_AR_F"];  
private _bluSquadHeavy = ["B_Soldier_TL_F", "B_Soldier_F", "B_Soldier_F", "B_soldier_AR_F", "B_soldier_M_F", "B_soldier_AT_F"];
```

Use only classnames to build each group of the faction:

THIS IS A CLASSNAME

```
// Soldiers  
private _bluSquadLight = ["B_Soldier_TL_F", "B_Soldier_F"];  
private _bluSquadRegular = ["B_Soldier_TL_F", "B_Soldier_F", "  
private _bluSquadHeavy = ["B_Soldier_TL_F", "B_Soldier_F", "
```

In Eden Editor, here is how you figure out what soldier classname or vehicle classname you want to, just putting your mouse arrow over the unit/vehicle:



Important 1: you can use whatever loaded mod's units by the server. For example, if you wanna use RHS or CUP units in blufor, add the unit's classnames over there.

Important 2: You can do the same with vehicles, **although is NOT recommended to create a "vehicle group"** (with more than one vehicle) because Arma AI doesn't work well with vehicle groups when moving through the map.

How do I define how big must be a faction on the map?

Now, let's request CSWR to spawn the faction [groups already configured](#). In `fn_CSWR_population.sqf` file, search the section "SPAWNING GROUPS" of the faction you want to populate in your mission:

1) Each line is a group that will spawn:

Each line represents a group that you wanna spawn right after the match starts. You will see the vehicle groups separated from the soldier's groups just to make it easier.

```
// Soldiers Groups
// [ faction, faction's spawnpoints, faction's squad size, initial squad behaviour ("SAFE", "AWARE", "COMBAT", "
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "CHAOS", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "CHAOS", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "COMBAT", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "COMBAT", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadHeavy, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadHeavy, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadHeavy, "AWARE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadHeavy, "AWARE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
```

Don't forget to change (or not) with a specific group you want in each line:

```
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SA
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SA
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SA
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SA
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadRegular, "
```

2) Increase or decrease the faction size:

Super easy: just add or remove one or more lines in "Spawning Groups" section in the same file.

How do I manipulate the initial behavior of groups?

CSWR is limited to defining only the **initial behavior** of each faction's group. As the match unfolds, the original Arma 3 AI will make its own decisions. Let's take a look through the possible customizations. Let's check the `fn_CSWR_population.sqf` file.

1) Define the group personality:

For example, go to "Spawning Groups: Blufor" section and check it out:

```
// SPAWNING GROUPS: BLUFOR
// Define each group and their features and destination.

// Vehicles Groups
// [ faction, faction's spawnpoints, faction's vehicle size, initial crew behaviour ("SAFE", "AWARE", "COMBAT") ]

[BLUFOR, CSWR_bluSpawnPoints, _bluVehLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_vehicle;
[BLUFOR, CSWR_bluSpawnPoints, _bluVehLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_vehicle;
[BLUFOR, CSWR_bluSpawnPoints, _bluVehRegular, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_vehicle;
[BLUFOR, CSWR_bluSpawnPoints, _bluVehHeavy, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_vehicle;
```

Above, each line represents a group that will spawn, and each group has its initial personality configured. Below, the options you can use for one or more groups, up to you:

For people:

"SAFE"	Group starts walking with the guns low, looking around and feeling safe. (More natural, highly recommended for the most)
"AWARE"	Group starts walking but with guns ready, looking around and concerned.
"COMBAT"	Group starts running, ready to fight and keep the formation.
"CHAOS"	Group starts running, ready to fight and loose the formation.

For vehicle:

"SAFE"	Vehicle goes slow, crew feel safe, try to ride only on streets/roads. (More natural, recommended)
"AWARE"	Vehicle goes slow, crew aware, try to ride only on streets/roads.
"COMBAT"	Vehicle gets speed, rides everywhere, keeping the formation.

"CHAOS"	Vehicle gets speed, rides everywhere, losing the formation.
---------	---

2) Define the group destination on the map:

Another behavior point to set for each group is its destination (waypoints) through the map: [let's check how the waypoints work here](#).

How do Waypoints work?

In CSWR, there is no end-point, which means after the group spawns, it will walk through the map directly to the pre-defined group of waypoints, randomly, and can take a break just for a while before to the next waypoint.

Each faction's group configured to spawn can have a different destination (group of waypoints pre-defined).

1) Define how many waypoints will be available:

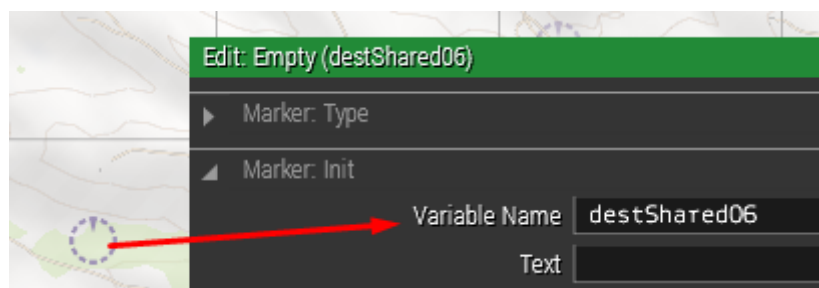
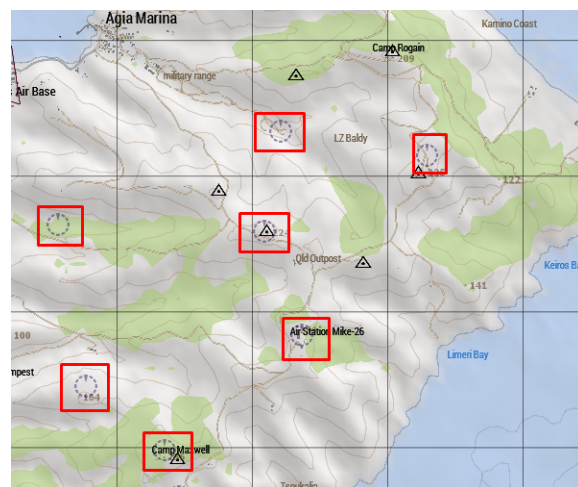
Let's open the file for the first time:

Path: `\Your_Mission_Folder\CSWRandomizr\fn_CSWR_spawnsAndWaypoints.sqf`

The groups of waypoints are already done. The only thing you must do is define how many options each group of waypoints will get:

```
// WAYPOINTS: SHARED
// Define where anyone (including civilian)
// For new destination, add a new "empty marker"

CSWR_destinationShared =
[
    "destShared01",
    "destShared02",
    "destShared03",
    "destShared04",
    "destShared05",
    "destShared06",
    "destShared07",
    "destShared08",
    "destShared09",
    "destShared10"
];
```



By default, you have 10 waypoints "destShared" to drop and to name in your mission. Of course, you might remove or add waypoints "destShared" as much as

you want, since you don't forget to sync it in *fn_CSWR_spawnsAndWaypoints.sqf* file and Eden Editor.

2) Define where each spawned group will move:

Back to the file: *fn_CSWR_population.sqf*

```
// Soldiers Groups
// [ faction, faction's spawnpoints, faction's squad size, initial squad behaviour ("SAFE", "AWARE", "COMBAT", "CHAOS"), THY_fnc_CSWR_wpGoToAnywhere ] call THY_fnc_CSWR_people;

[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "CHAOS", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "CHAOS", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "COMBAT", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "COMBAT", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
[BLUFOR, CSWR_bluSpawnPoints, _bluSquadLight, "SAFE", THY_fnc_CSWR_wpGoToAnywhere] call THY_fnc_CSWR_people;
```

Particularly, I like to use the same configuration for all combat factions, changing it just for the civilian faction. Let's check what options you have to change in *fn_CSWR_population.sqf*:

<i>THY_fnc_CSWR_wpGoToAnywhere</i>	Group goes to any waypoint. (Highly recommended to be used by armed factions)
<i>THY_fnc_CSWR_wpGoToDestShared</i>	Group goes to where anyone may go, including civilian waypoints. (Highly recommended to be used for civilian faction)
<i>THY_fnc_CSWR_wpGoToDestBlu</i>	Group goes to Blufor special waypoints. (Recommended to be used only by Blufor)
<i>THY_fnc_CSWR_wpGoToDestOp</i>	Group goes to Opfor special waypoints. (Recommended to be used only by Blufor)
<i>THY_fnc_CSWR_wpGoToDestInd</i>	Group goes to Independent special waypoints. (Recommended to be used only by Blufor)

Important: Never set a waypoint out of the map limits. Arma 3 no recognize positions beyond the map edges.

Can the groups move free, with no waypoints?

No. In CSWR, the idea is the Editor has total control of the areas where the troops should visit.

How do Spawnpoints work?

Manually define which marks the faction can use as a spawn point. You can create a lot of spawn points for one or more factions. Once the spawn points are created, the script will spawn the groups randomly through the faction spawns. There is no re-spawn. Death is death.

Path: \Your_Mission_Folder\CSWRandomizr\fn_CSWR_spawnsAndWaypoints.sqf

Are vehicles blowing up when the match starts?

Different from soldiers, vehicles need a bigger empty space to spawn safe, with no collisions. So, if it happens yet, make sure the spawnpoint that vehicles are using is in a clear and flat ground, for example, over a road or in an empty field. Urban streets can be a challenge for vehicles.

Important 1: the more spawnpoints available, the fewer accidents such as infantry being run over and vehicles colliding.

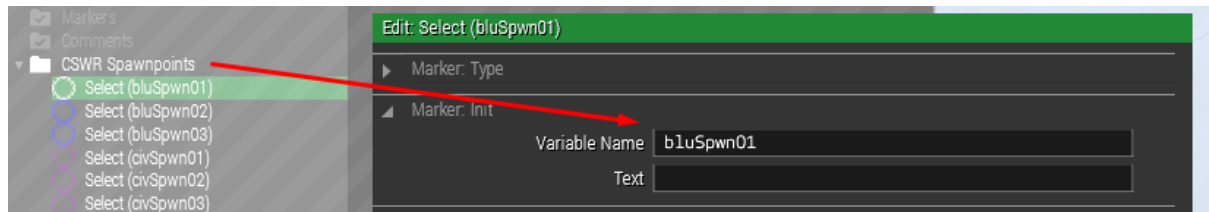
Important 2: never set a spawnpoint out of the map limits. Arma 3 no recognize positions beyond the map edges.

Fixing: units spawning out of map

Look to the image below:



If you are facing the same problem, it's because some spawnpoint is missing on map. Make sure all spawnpoints are declared in the `fn_CSWR_spawnsAndWaypoints.sqf` file also are correctly dropped and named on your mission map.



See: if you want to use less than those spawnpoints declared, make sure to comment the spawnpoint line to avoid that weird line problem:

Before:

```
// FACTION SPAWNPOINTS:
// Define where each faction in-game will spawn randomly.
// For new spawnpoints, add a new "empty marker" on Eden,

// BluFor spawnpoints:
CSWR_bluSpawnPoints =
[
    "bluSpwn01",
    "bluSpwn02",
    "bluSpwn03"
];

// OpFor spawnpoints:
CSWR_opSpawnPoints =
[
    "opSpwn01",
    "opSpwn02",
    "opSpwn03"
];
```

After (solution):

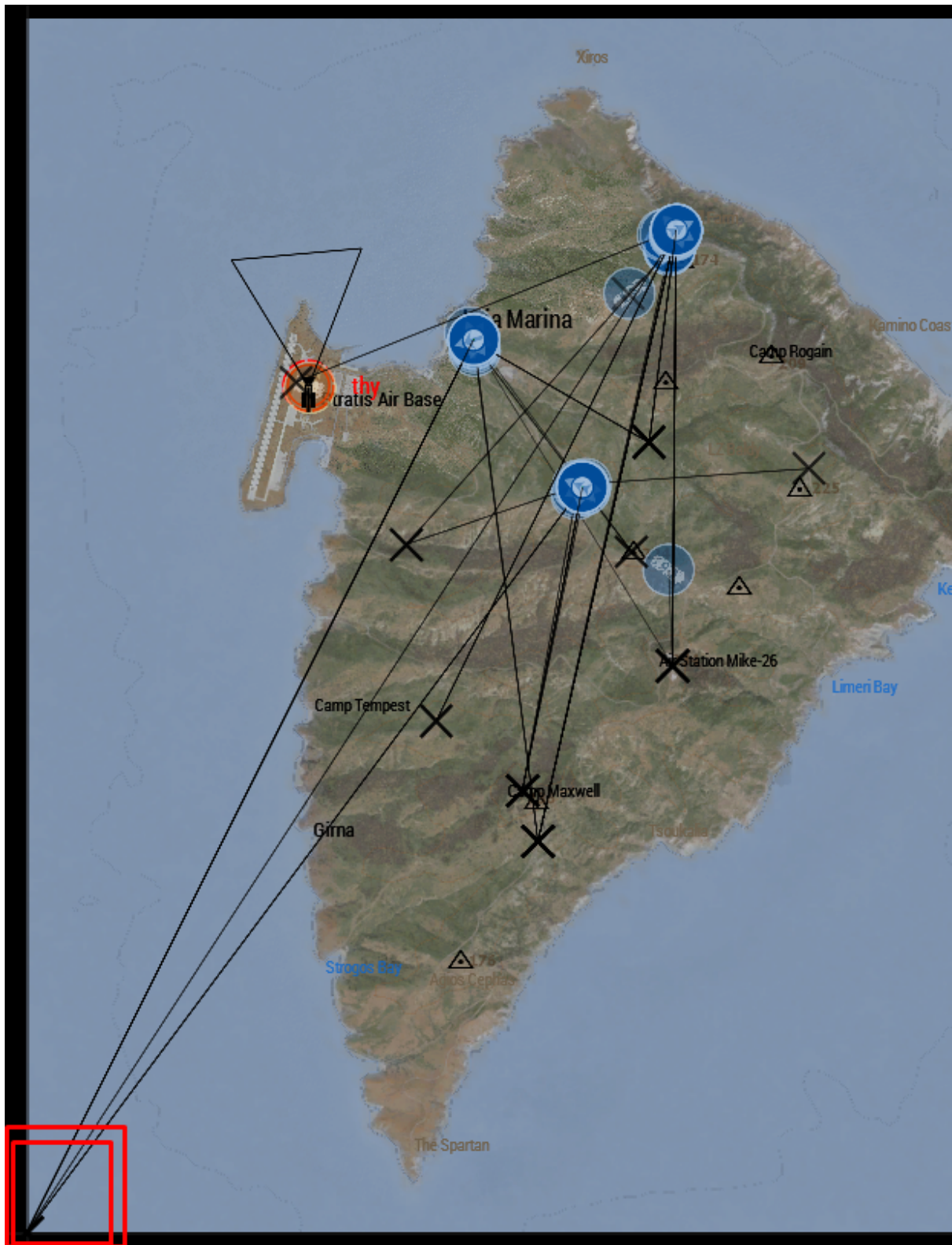
```
// FACTION SPAWNPOINTS:
// Define where each faction in-game will spawn randomly.
// For new spawnpoints, add a new "empty marker" on Eden,

// BluFor spawnpoints:
CSWR_bluSpawnPoints =
[
    "bluSpwn01",
    "bluSpwn02",
    // "bluSpwn03"
];

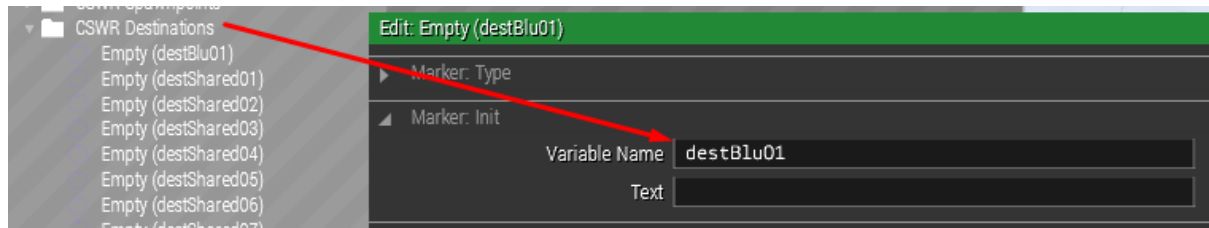
// OpFor spawnpoints:
CSWR_opSpawnPoints =
[
    "opSpwn01",
    "opSpwn02",
    // "opSpwn03"
];
```


Fixing: weird waypoint out of map

Look to the image below:



If you are facing the same problem, it's because some waypoint is missing on map. Make sure all waypoints are declared in the `fn_CSWR_spawnsAndWaypoints.sqf` file also are correctly dropped and named on your mission map.



See: exclusive faction waypoints sometimes are not used, so you should comment on them to avoid that weird line problem:

Before:

```
// FACTION WAYPOINTS:
// Define where each faction in-game will move randomly.
// For new destination, add a new "empty marker" on Eden,

// BluFor destination:
CSWR_destinationBlu =
[
    "destBlu01",
    "destBlu02"
];

// OpFor destination:
CSWR_destinationOp =
[
    "destOp01",
    "destOp02"
];

// Independent destination:
CSWR_destinationInd =
[
    "destInd01",
    "destInd02"
];
```

After (solution):

```
// FACTION WAYPOINTS:
// Define where each faction in-game will move randomly.
// For new destination, add a new "empty marker" on Eden,

// BluFor destination:
CSWR_destinationBlu =
[
    //"destBlu01",
    //"destBlu02"
];

// OpFor destination:
CSWR_destinationOp =
[
    //"destOp01",
    //"destOp02"
];

// Independent destination:
CSWR_destinationInd =
[
    //"destInd01",
    //"destInd02"
];
```

How can I contribute to the CSWR script?

Discussion on Bohemia Forums

<https://forums.bohemia.net/forums/topic/237504-release-controlled-spawn-and-waypoints-randomizr/>

Changelog on Github

<https://github.com/aldolammel/Arma-3-Controlled-Spawn-And-Waypoints-Randomizr-Script>

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