

# **Operation Editor Manual**

ver. 2012.06.07

**Graviteam ®**

## TABLE OF CONTENTS

<b>1 General information on how to create an operation</b>	<b>3</b>
1.1 How to make an operation project	4
1.2 Initial settings for an operation	6
1.2.1 Operation description	8
1.2.2 How to create briefings	9
1.2.2.1 Notes on how to draw a briefing map	11
1.2.2.2 Text localization	11
1.2.3 Active platoons and reserves	13
1.2.4 Some notes on creation an operation for a tank simulator	16
<b>2 Operation editor</b>	<b>17</b>
2.1 Combat area settings	20
2.2 Deploying platoons on the map	23
2.3 Compiling an operation	26
<b>3 Reference materials</b>	<b>27</b>
3.1 Names of squads and vehicles	30
3.2 Names of modern squads and vehicles	36
3.3 The logic of the operation	42

## 1 General information on how to create an operation

To create and edit an operation use **Operation Editor**. To start the editor, click on **opeditor.cmd** in the game root directory, or click on the editor shortcut in Start\Programs...

To create an operation you will need a *third-party freeware software LibreOffice (recommended version is 3.5)*. You can download it from official web page <http://www.libreoffice.org>.

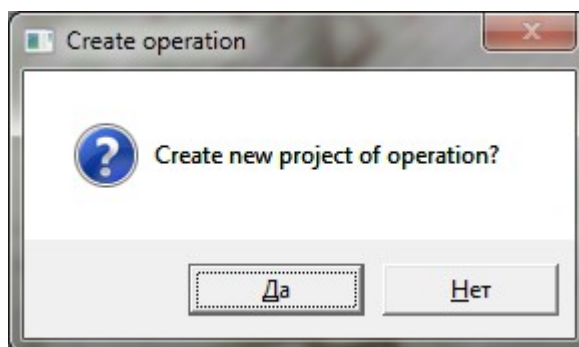
To create an operation you will need to carry out the following steps:

- 1) make an operation project, set operation settings in config file 'src\<project name>.ods' using **Calc** application from **LibreOffice** software;
- 2) create description for platoons and reserves in config file 'src\<project name>\_div\_pool.ods';
- 3) write text-description for operation and do all necessary localizations in 'src\<project name>\_text.ods';
- 4) add picture '<project name>\_op\_image.tga' that will be placed next to operation name in the game list of operations. The picture must be 160x100 pixels, TGA 32 bit.
- 5) convert all files into binary data using **Operation Editor**;
- 6) draw briefings in 'briefs\op\_brief.odg' using **LibreOffice Draw**;
- 7) convert briefing graphic by pressing **[Ctrl+G]** in the editor;
- 8) write briefing script '<project name>\_scripts.engcfg' (text file in ANSI code), specifying scale, adding graphic description from steps 6-7. Convert the script by pressing **[Ctrl+H]**;
- 9) using **Operation Editor** place platoons, set controlled territory, weather conditions, key points, terrain settings, define tasks and objects for AI;
- 10) when all settings are set, compile the operation project and, if no errors will be detected, new operation will be automatically added to the list of available operations in the game menu.

## 1.1 How to make an operation project

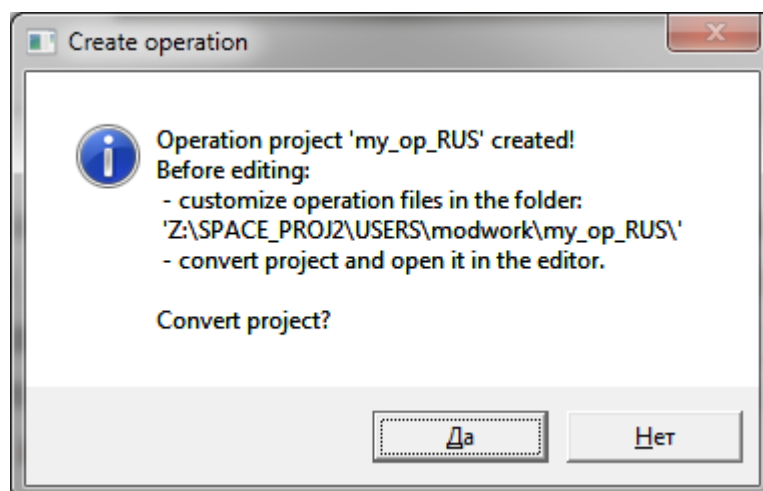
To start a new project:

- 1) Start **Operation Editor**. After the editor is loaded you will see a window proposing to choose an existing operation project from the list. To create a new operation project, click on **Cancel** button.
- 2) In the next dialogue box (pic. 1.1) click on **Yes** button.



Pic.1.1 – Dialogue box proposing to create a new operation project

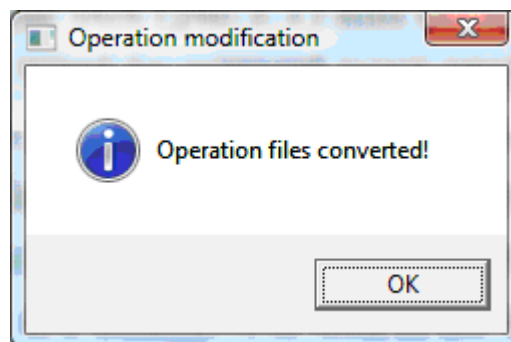
- 3) In the next dialogue box choose the path for your future operation project files and enter the name (without file extension). Example for the path: 'users\modwork\my\_op\_RUS\' example for the name: 'my\_op\_RUS'.
- 4) After the project is created the next dialogue box (pic. 1.2) with further instructions will appear.



Pic.1.2 – Dialogue box with further instructions

- 5) Click on **No** button if you want to edit operation settings in config files now (see paragraph 1.2). Later on you can convert operation project by clicking on **No** button in previous dialogue box (pic.1.1) and choosing already existing project.

- 6) Or click on **Yes** button if you want to convert your project files into binary data that are used by **Operation Editor**. This will allow you to open your operation in the editor, where you can place platoons, set controlled territory, weather conditions, key points, terrain settings, define tasks and objects for AI.
- 7) After the project files are converted, and if no errors are detected, the following dialogue box will appear (pic.1.3).



Pic.1.3 – Dialogue box with notification that operation files are successfully converted

- 8) Now you can open your operation in **Operation Editor**.

By default, the operation from demo version will be created and Player will take USSR side. The operation is already ready for playing: just deploy platoons, setup AI plans on the map, compile the operation and it will be added to the game.

## 1.2 Initial settings for an operation

After the operation project is created, the following files and folders can be found in the root folder 'my\_op\_RUS' of your operation:

SRC\	Folder with project description files: configuration, platoons description and operation text-description.
my_op_RUS.ods	Config file with main parameters of the operation: number of turns, combat area, sides of the conflict etc.
my_op_RUS_div_pool.ods	Description for platoons and reserves. Reserves are set in 'reserves' section, platoons are set in 'act_platoons' section
my_op_RUS_text.ods	Text-description of the operation. Can have different localizations.
make_my_op_RUS_project.cmd	Executable file that converts project files into binary data for further editing of operation in <b>Operation Editor</b> .
make_my_op_RUS_project.engcfg	Description for the way project files will be converted.
BRIEFS\	Folder with briefing description files.
op_brief.odg	Picture of the briefing. Each page should have name in English and contain picture of the briefing.
op_brief.engcfg	Briefing script. Is created automatically after the picture of the briefing is converted in the editor (by pressing <b>[Ctrl+G]</b> ).
\	Main folder contains project files that are used by <b>Operation Editor</b> .
my_op_RUS.camproj2	Config file with main parameters of the operation: combat area, sides of the conflict, starting date and duration of the operation, and victory conditions.
my_op_RUS_op_image.tga	Picture next to operation name in the game list of operations. Must be 160x100 pixels, TGA 32 bit.
my_op_RUS_scripts.engcfg	Main script used for specifying the scale and drawing briefings. Text file in ANSI

<code>my_op_RUS_scripts.script</code>	code.
<code>my_op_RUS_div_pool.cfgpack</code>	Compiled script file, used by the editor. Compiled list of platoons and reserves, used by the editor.
<code>my_op_RUS_frames.cfgpack</code>	Operation description: disposition of platoons, AI tactics, description for combat area, briefings, weather etc.
<code>my_op_RUS_text.loc_eng.textpack</code>	Compiled operation text in English.
<code>my_op_RUS_text.loc_rus.textpack</code>	Compiled operation text in Russian.

*\*File names written in black can be edited*

Before converting operation project files, edit them according to the hints listed in each file. It is advisable first to finish making all changes in 'my\_op\_RUS.engcfg2' file and only then open the operation in **Operation Editor!**

### 1.2.1 Operation description

**In operation description file (SRC\my\_op\_RUS.ods):**

Field "chap\_id" sets the name of the chapter.

Field "polygon" sets the combat area in which the operation will take place (see table 3.3).

Field "camp\_area" sets the size of the combat area (see table 3.3).

Fields "user\_side" and "enemy\_side" set ID for Player side and Enemy side respectively: USSR, GER, SAR, ANG, IRAN, IRAQ, IRA (for Afghan Mujahideen).

Field "date\_beg" sets starting date for the operation in the following format: 0xYYYYMMDD.

Field "time\_beg" sets starting time of the day for the operation in the following format: 0xHHMM.

//number of turns

Fields "turns" and "hours\_per\_turn" set number of turns in operation and duration (in hours) of each turn (not less than 4 hours).

Field "div\_units\_base" sets the database from which units' description will be taken (tabs\div\_units.cfgpack);

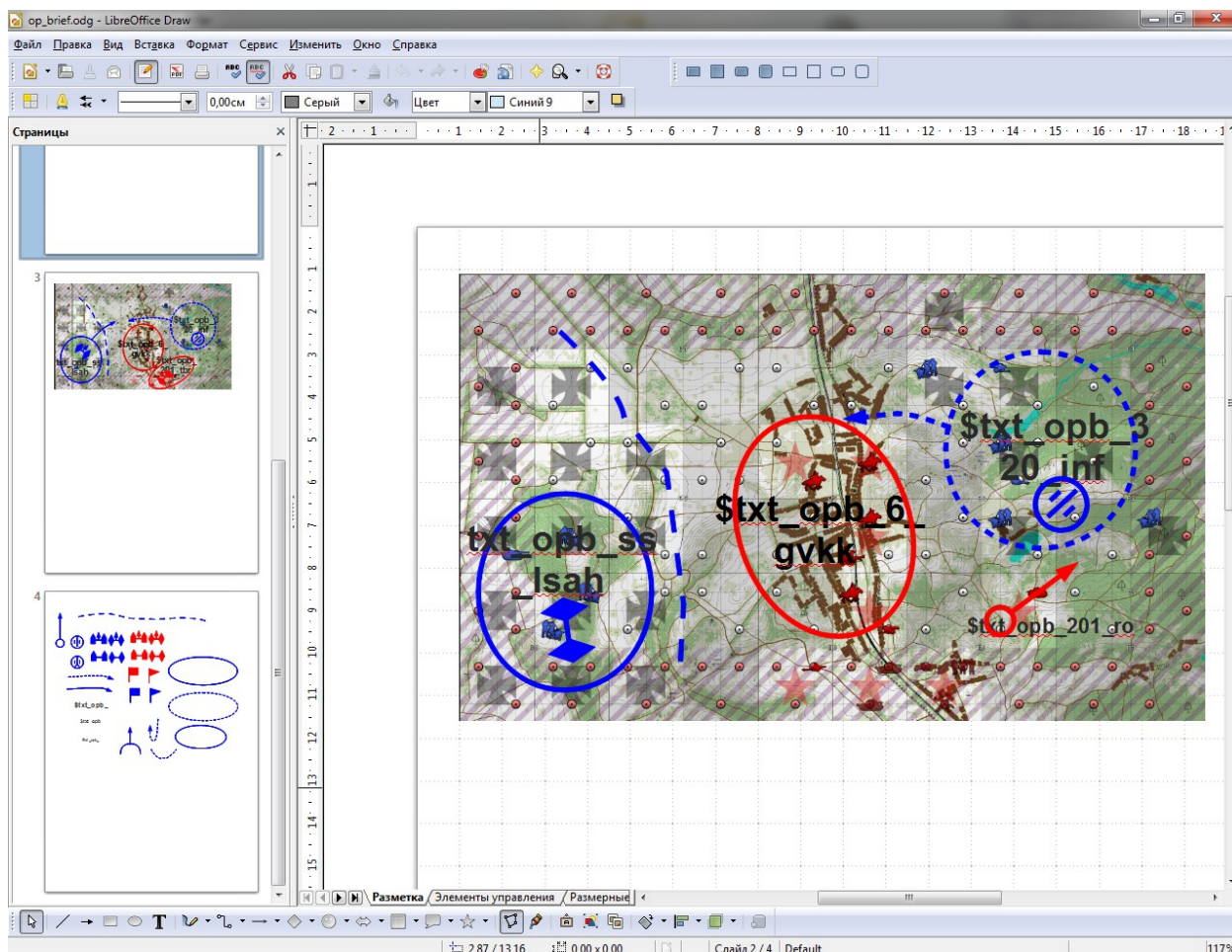
Field "markers" sets marks on vehicles, guns and tanks.

Field "score\_???" sets victory conditions for the operation.



## 1.2.2 How to create briefings

To create briefings use **Draw** graphic editor from **LibreOffice** software. Interface of the application is shown on pic. 1.4.



Pic. 1.4 – Interface of Draw graphic editor

Briefings description file 'op\_brief.odg' should be located in subfolder 'BRIEFS' of the main folder of the project. Briefings description is a multipage document, each page of which contains graphic representation of briefing for each turn. Pages should be named "brief\_??", where "??" is number of the turn for which briefing is created. For example "brief\_01, brief\_03, brief\_05" – for 1, 3 and 5 turns respectively.

Names of pages that are used to store auxiliary objects should start with "?". For example, "?stencil" – page for briefing stencils.

After you convert the graphic of the briefing (by pressing **[Ctrl+G]**) script file will be created in 'BRIEFS' folder that can be added to operation script. Name of the page in script file will start with "draw". Example for the page "brief\_01" – "draw\_brief\_01".

To add briefing description to the operation script, the first line of file '<operation name>\_scripts.engcfg' should be:

```
#include "briefs\op_brief.engcfg"
```

To launch briefing drawing script use command:

"call, draw\_brief\_01;" in corresponding section, the name of which, in its turn, is set in the editor.

Example:

```
brief_01()
{
    call, settings;
    call, draw_brief_01;
    break;
}
```

In the editor (in the field **Script**) write "brief\_01" for chosen turn. After the graphic is converted (or some changes are made in the script) the script should be recompiled (by pressing [**Ctrl+H**]), in order for changes to take effect.

It is not necessary to close briefing description in graphic editor, you can simply save it.

Depending on the size of the combat area, scale coefficients should be set. It is reasonable to set them in separate function (for example, **settings**), that is launched before drawing: "call, settings;". Scale coefficients are listed in the Table 3.3.

Example of settings function:

```
settings()
{
    font, handw_big;
    line_scale, 10240.0, 6144.0, 1.0, -6144.0, -4096.0;
    text_scale, 10240.0, 6144.0, 1.0, -6144.0, -4096.0;
    ret;
}
```

Here you also set the name of the font for inscriptions, using command «font».

**1.2.2.1 Notes on how to draw a briefing map.** Before you start drawing, it is necessary to create a background map of combat area, according to which scale of the picture will be defined. For this purpose you can make a screenshot of combat area in the editor on the largest scale. Edit the screenshot in graphic editor and insert the picture on the page of the briefing in **Draw** application.

Then draw over the inserted picture some signs, pointers etc. For this purpose you can use standard primitives: ellipse, rectangle, rhomb, line, Bézier curve, patch, polyline or polygon (but only protuberant). **Operation editor** supports changing of fillings and contour colors, different types of outlines and lines. For arrows (ends of lines) only their length is taken into consideration but not different outlines.

You can also place text blocks, for which specific color and size can be set (14 pt by default). Block should contain a marker from localization file, which starts with "\$". Localization file should contain the same marker, otherwise "???" will appear. The inscription is centering in the center of the block.

None of the graphic objects should go beyond the background picture, except for text blocks.

**1.2.2.2 Text localization.** To make different language versions of operation texts (localization) use localization file 'SRC\<operation name>\_text.ods'. To edit it use **Calc** application from **LibreOffice** software.

Localization file is represented by a table with text markers on the left and different language versions of operation text on the right (pic.1.5). Each marker is represented by a lower case line in English, consisting of no more than 31 symbols. These markers are used in briefing texts, in platoons and reserves descriptions, and are also used to set key points in the editor.

Different columns are used for different language versions: 'loc\_rus' – for Russian, 'loc\_eng' – for English, 'loc\_ger' – for German etc.

To translate a line use '\n' symbol, for tabulation – '\t', to set color – '\<digit from 1 to 8>'. Color codes are the following: 1 — black (by default), 2 — green, 3 — yellow, 4 — red, 5 — white, 6 — grey, 7 — blue, 8 — purple. Color is set for the whole line up to '\n' symbol. Color is used only in certain texts!

Each line is considered as a marker only if the digit is inserted in the first column, otherwise the line won't be converted (will be used as a commentary). Marker can indicate string table. In this case a digit should be inserted in the first column and the field with marker name should be left empty. To consolidate different lines use '+' in marker field (don't forget about a digit in the first column).

stencil\_text.ods - LibreOffice Calc

Файл Правка Вид Вставка Формат Сервис Данные Окно Справка

Arial Cyr 10

D41 fiv Σ = txt\_op\_rkkapl\_6\_qvkk\_1c\_3p

A	B	C	D	E	F
Active Number	Symbol length	Comment	Marker or + for string joint	loc_rus	loc_eng
1		Special symbols			
2			txt_spec_syms_freq	0123456789	0123456789
3	1		+	"%3%&"%4%~"	"%3%&"%4%~"
4	1		+	00-123-71 NS	00-123-71 NS
5	1		+		
6	1		+	АБВГДЕЖЗИЙКЛМНОПРСТУФХЦЧШЩЪЫЬЭЮЯ	ABCDEFGHIJKLMNOPQRSTUVWXYZ
7	1			абвгдежзийклмнопрстуфхцчшщъыьэюя	abcdefghijklmnopqrstuvwxyz
8					
9					
10	1	Operation name	txt_op_name	Тарановка 13 февраля 1943г. в/48 гв. КК и 201 тбр	Taranovka. February 13 1943. in/48 gds. Cav. Corps. 201 tank bde
11	1	Chapter name	txt_op_chap	Полк восток отступает от Тарановки 13 февраля 1943г. в/48 гв. КК и 201 тбр	USER OPERATION in/48 February 2 - February 28, 1943. in/48USSR - Germ
12		story over the turns (1 time - 1 turn - the first line is a briefing, last - debriefing)	txt_op_canvas	Части 201 тбр и 6 гв. КК отступают от Тарановки 320 тбр в районе Тарановки. Боевая задача: не допустить соединения частей 320 Inf с основными силами. Части 320 Inf движутся с востока и северо-востока. Займите оборону на пути их отступления, уничтожьте отступающего противника. Западнее Тарановки обнаружено сосредоточение частей дивизии SS LSAH. Прибыли танки 201 тбр. Прибыла передовая автомастерская.	The 201st tank bde and the 6th gds. Cavalry Corps block lines of retreat near Taranovka. Combat mission: prevent 320 Inf from joining the main Troops of 320 Inf move from the east and northeast. Take defensive pos of retreat and destroy all retreating enemy troops. Troops of German division SS LSAH are found west of Taranovka. Tanks of the 201st tank bde have arrived. Mobile repair station has arrived.
13	2				
14	2				
15	2				
16	2				
17	2				
18	2				
19	2				
20					
21					
22		Texts for graphics			
23	3		txt_opb_201_tbr	201 тбр	201 tank bde
24	3		txt_opb_6_qvkk	6 гв. КК	6 gds Cav. Corps
25	3		txt_opb_320_inf	320 Inf	320 Inf
26	3		txt_opb_ss_lsh	SS LSAH	SS LSAH
27	3		txt_opb_201_re	ре	recon
28					
29		Divisions names			
30	4		txt_op_rkkapl_201_tbr	3 ТА, 201 тбр	3 TA, 201 tank bde
31	4		txt_op_rkkapl_6_qvkk	6 гв. КК, 8 гв. КД	6 gds Cav. Corps, 8 gds Cav Div
32	4		txt_op_rkkapl_common	3 ТА, снабжение	3 TA, supply
33					
34	4		txt_op_werp_320_inf	320 Inf	320 Inf
35	4		txt_op_werp_ss_lsh	SS LSAH, 1 ттр. полк	SS LSAH, 1 pzgr reg
36	4		txt_op_werp_ss_lsh_shw_pcoy	4 рота тжж. танков	4 sw pz coy
37					
38		Coys/plats names			
39	5		txt_op_rkkapl_6_qvkk_1c_1p	1 эскадрон, 1 взвод	1 squadron, 1 plat
40	5		txt_op_rkkapl_6_qvkk_1c_2p	1 эскадрон, 2 взвод	1 squadron, 2 plat
41	5		txt_op_rkkapl_6_qvkk_1c_3p	1 эскадрон, 3 взвод	1 squadron, 3 plat
42	5		txt_op_rkkapl_6_qvkk_1c_4p	1 эскадрон, 4 взвод	1 squadron, 4 plat
43	5		txt_op_rkkapl_6_qvkk_1c_mg	1 эскадрон, пул. взвод	1 squadron, mg plat
44	5		txt_op_rkkapl_6_qvkk_atr	1 эскадрон, взвод птр	1 squadron, atr plat
45	5		txt_op_rkkapl_6_qvkk_at_bat	птр дивизион, 1 батарея	AT squadron, 1 battery
46					
47	5		txt_op_rkkapl_201_tbr_scouts	развед. взвод	recon plat
48	5		txt_op_rkkapl_201_tbr_1c_1p	1 тнк. рота, 1 взвод	1 tnk coy, 1 plat
49	5		txt_op_rkkapl_201_tbr_1c_2p	1 тнк. рота, 2 взвод	1 tnk coy, 2 plat
50					

loc\_kit /

Лист 1 / 1 PageStyle\_loc\_kit СТАНД | Сумма=0 75%

Pic. 1.5 – Localization table in LibreOffice Calc application

### Obligatory markers:

txt\_op\_name – name and short description of the operation.

txt\_op\_chap – name of the campaign to which operation (chapter) is related.

txt\_op\_canvas – text briefing for each turn, including initial briefing (the first line) and debriefing (the last line of the table). The size of this table should correspond to the number of turns in operation plus two extra lines.

### 1.2.3 Active platoons and reserves

In description of **reserves and platoons** file (SRC\my\_op\_RUS\_div\_pool.ods):

Field "camo" sets camouflage for a platoon or all troops involved in the operation (in the pool or in the whole operation).

Field "season" sets season for a platoon or all troops involved in the operation (in the pool or in the whole operation).

**Description of the reserves is set in the "reserves" section:**

Field "code" sets battalion/regiment/division ID.

Field "name" sets name from the local text file.

Fields "sold\_fams", "sold\_names" set name and last name for soldiers involved in the operation.

Field "div\_sprite" in reserves description shows the type of the icon listed in the hierarchical table: divh\_coy, divh\_batn, divh\_reg, divh\_bde and divh\_div, for company, battalion, regiment, brigade and division respectively.

Field "marks\_name" for names of emblems and description of tactical numbers (see table 3.2).

Section **"pool"** sets the list of available reserves. Each line of the section describes the squad in reserve:

- name, quantity, flags (see table 1.1);
- condition of the squad: morale, experience, physical condition, tiredness;
- provision: fuel, ammo, commander level (0.5 – by default), weapon damage;
- name of support.

Section **"act\_platoons"** lists all active platoons that are involved in operation.

Keep in mind, that in description of active platoons, field "uid" should have a unique number.

Field "code" should have a unique number for all platoons that form one pool of reserves. Besides, it should be two-digit hexadecimal number, with at least one number that doesn't equal 0. Also add in front of the number prefix "0x".

Example for field "uid":

```
uid = 0x2001;
uid = 0x0001;
uid = 0x1201;
```

Example for field "code":

```
code = 0x21;
code = 0x85;
code = 0x33;
```

The lowest-order digit in the field "code" stands for the number of the platoon, next digit stands for the company, and the third one – for battalion. If the platoon is in the direct submission to commander of the battalion, the second and the third digits should be 0.

To set resources for platoons use field "level", in which the first digit stands for available fuel, the second – available ammo, the third one stands for commander level (0.5 – by default).

To set resources for supply platoons use field "level\_sup", in which the first digit stands for number of available refuelings, the second digit stands for number of available ammunition provisions. One refueling or one ammunition provision equals 100% in the table of platoons participating in the operation.

To set condition of the squad use field "params" in which the first digit stands for morale, the second digit stands for experience, the third digit stands for physical condition, and the last digit – for tiredness (0.0 – "fresh" troops).

Field "ai" is used to set ID for AI: USER – for player, AL? – for allies, EN? – for enemies.

Field "side" is used to set ID for participating in the operation sides: USSR, GER, SAR, ANG, IRAN, IRAQ, IRA (for Afghan Mujahideen).

Field "mobility" sets mobility type for squad: STAT, FOOT, HORS, WHEL, PIL, ASUP (supply by air), AIR (paratroopers).

Field "range" sets spotting range for platoon or coverage range for supply unit.

Field "str\_sprite" sets sprite for platoon (see table 3.1).

Field "type" sets type of platoon for AI: STR – offensive, SUP – support, SCT - scout, UNI – universal.

Field "stand\_cnt" sets number of turns, during which the platoon has been standing on the defensive before the operation starts.

Field "pool" sets pool of reserves, to which the platoon is attached (set in section "reserves").

Field "scout\_caps" sets ability for concealed movement. The platoon with this ability is spotted only when engaged by enemy troops.

Field "max\_squads" sets maximum number of squads in one platoon.

Enclosed section "**pool**" lists all squads that compose a platoon: their names, quantity, ID for name and last name of the commander (optional), flags for description of the squad, name of the support.

Table 1.1 lists flags that define features of the squads that compose a platoon or reserves (flags are added to the fourth numeric parameter after the name of the squad).

Table 1.1

### Squad flags

Value	Description
0x01	Historical squad
0x02	Non-historical squad. Can be disabled in game settings.
0x08	Repair brigade. Change "eng_caps" to set number of man-hours for each brigade.
0x10	Supply brigade. Change "level_sup" to set amount of supply.
0x20	Draft reinforcements. These units are used to reinforce other squads.
8 high-order number positions	Are used to create historical reference for a squad. If they equal 0x00, there won't be any historical reference for a squad. Use field "txt_op_hist_bkgnd" to set ID that corresponds to the text of historical reference for chosen squad. Line with 0 should be empty.

### 1.2.4 Some notes on creation an operation for tank simulator

In order to create an operation with modern tanks and vehicles involved (for tank simulator), it is obligatory to change in the description of your future operation (my\_op\_RUS.ods) name of the combat area (see table 3.3. Combat areas available for tank simulator are marked with stars), starting date for the operation and participating sides of the conflict (USSR, SAR, ANG, IRAN, IRAQ, IRA (for Afghan Mujahideen).

Also change:

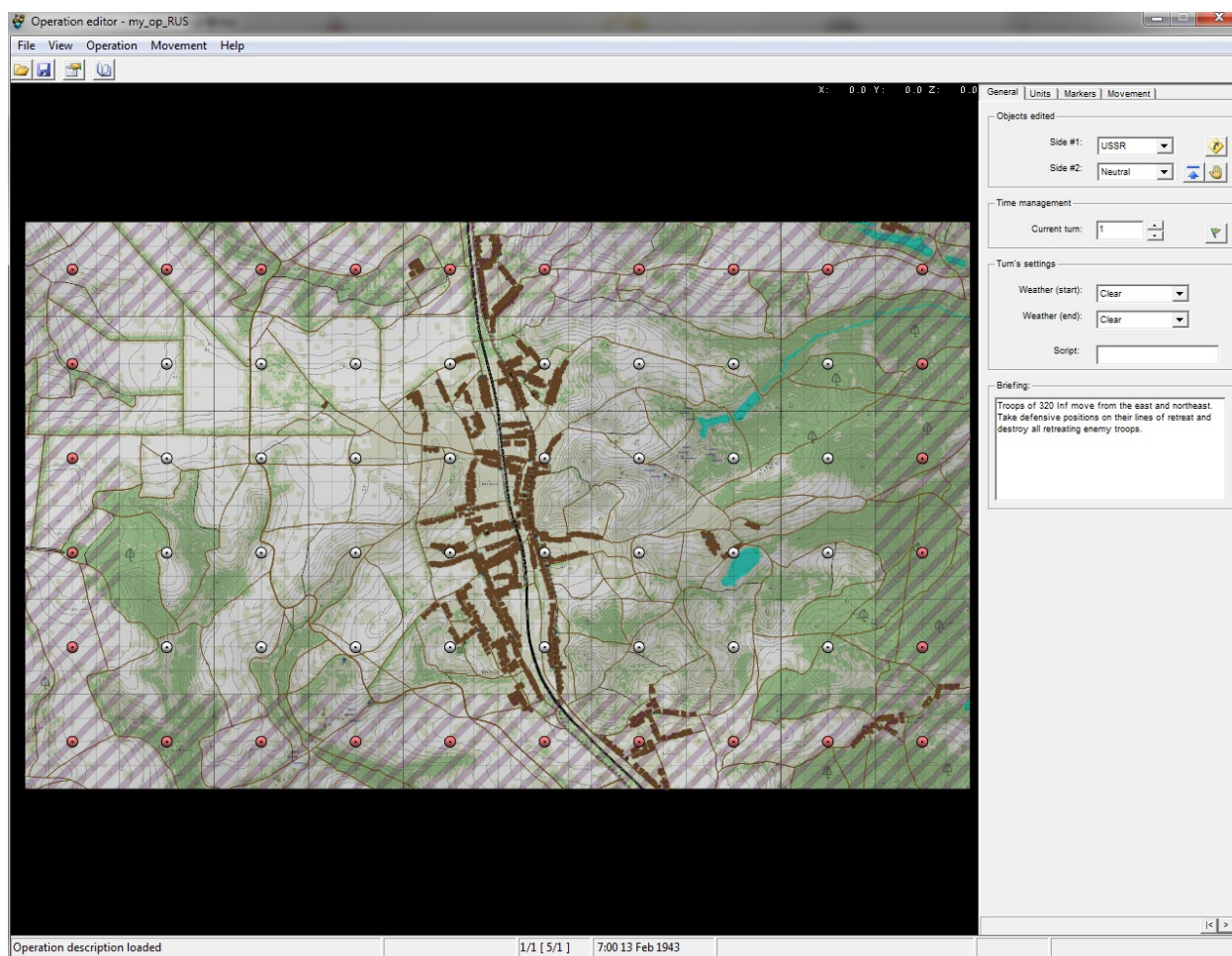
- squads and support units for platoons and reserves involved in the operation to modern (see paragraph 3.2, table 3.6);
- platoon sprites (table 3.1);
- names and last names of soldiers.

**Note!** Add at least one platoon either with T-62 or M60A1. This is necessary for player to participate in the game. Add to the description of this platoon field "user\_in" equals "true". This platoon should belong to player side and has a field "ai" set as "USER".



## 2 Operation Editor

After a new operation project was created and successfully converted into binary data, it can be now opened in **Operation editor**. When the project is opened you will see a map of combat area (pic. 2.1).

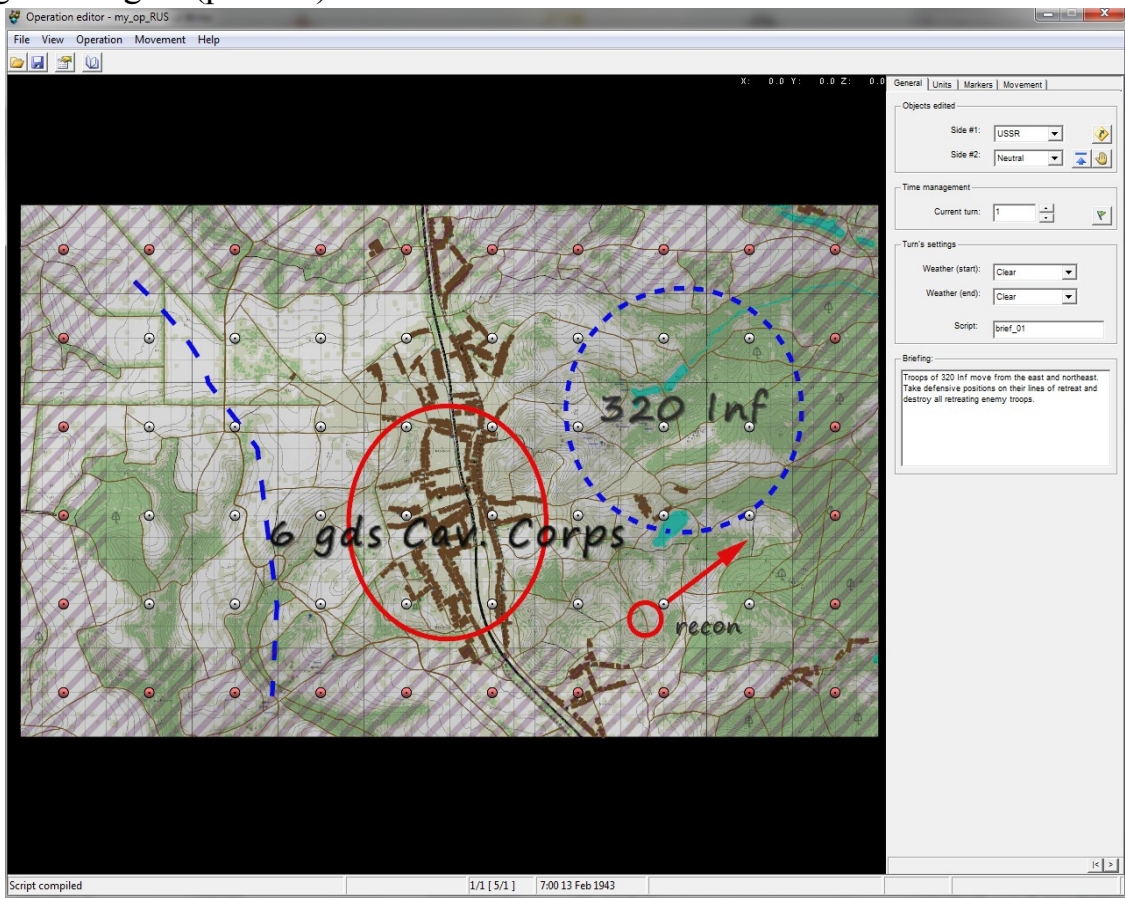


Pic. 2.1 – Operation editor

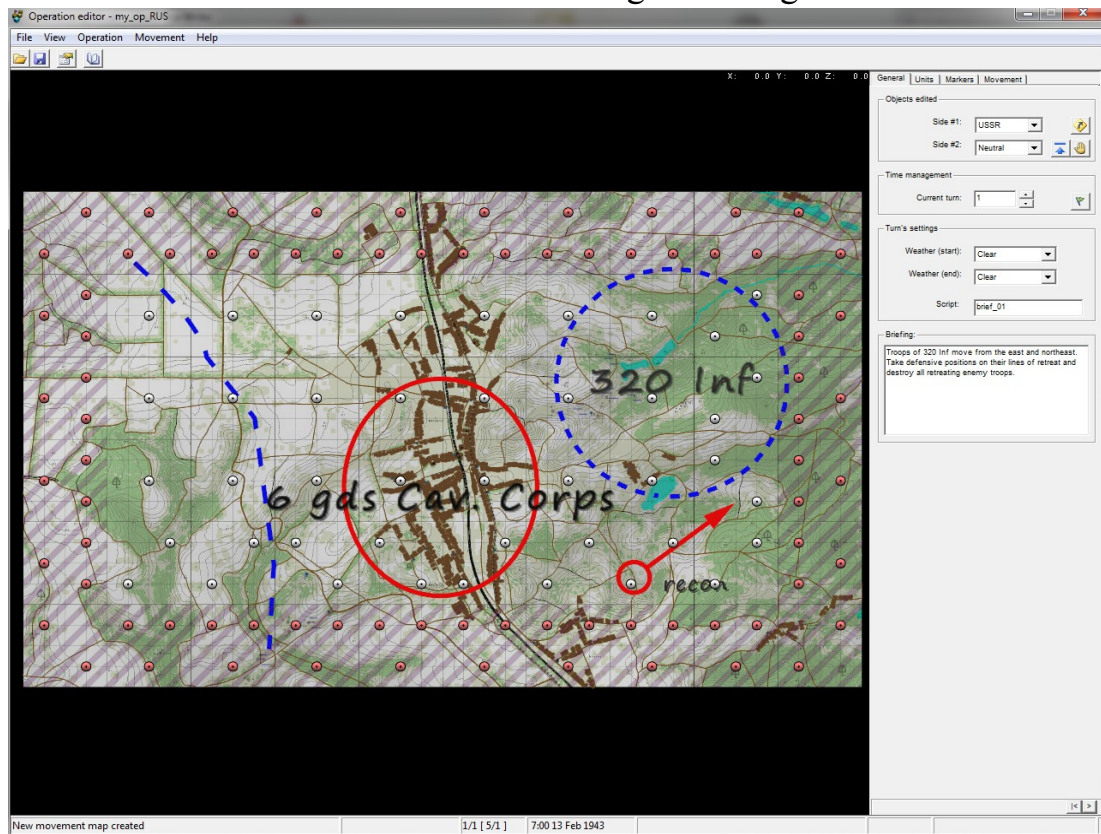
Area with hatching background indicates those squares from which reinforcements will arrive. Panel on the right contain information on the turn number and text of the briefing for a chosen turn. Here you can also set weather conditions for each turn and define the script with briefing image (pic.2.2). To do this, write the name of a chosen section from 'my\_op\_RUS\_scripts.engcfg', for example "brief\_01", in **Script** field. Then convert the graphic [**Ctrl+G**] and script [**Ctrl+H**]. To show briefing image press [**F6**] or click on the corresponding button in the menu. Write briefings for the second and the third turns, using "brief\_02", "brief\_03" respectively.

Squares with dots in the middle indicate places for deploying platoons. In the **Movement** tab you can set type of movement grid: standard (see pic. 2.3) and

progressive that allows deploying several platoons in one square. Now choose progressive grid (pic. 2.3).



Pic. 2.2 – Setting a briefing

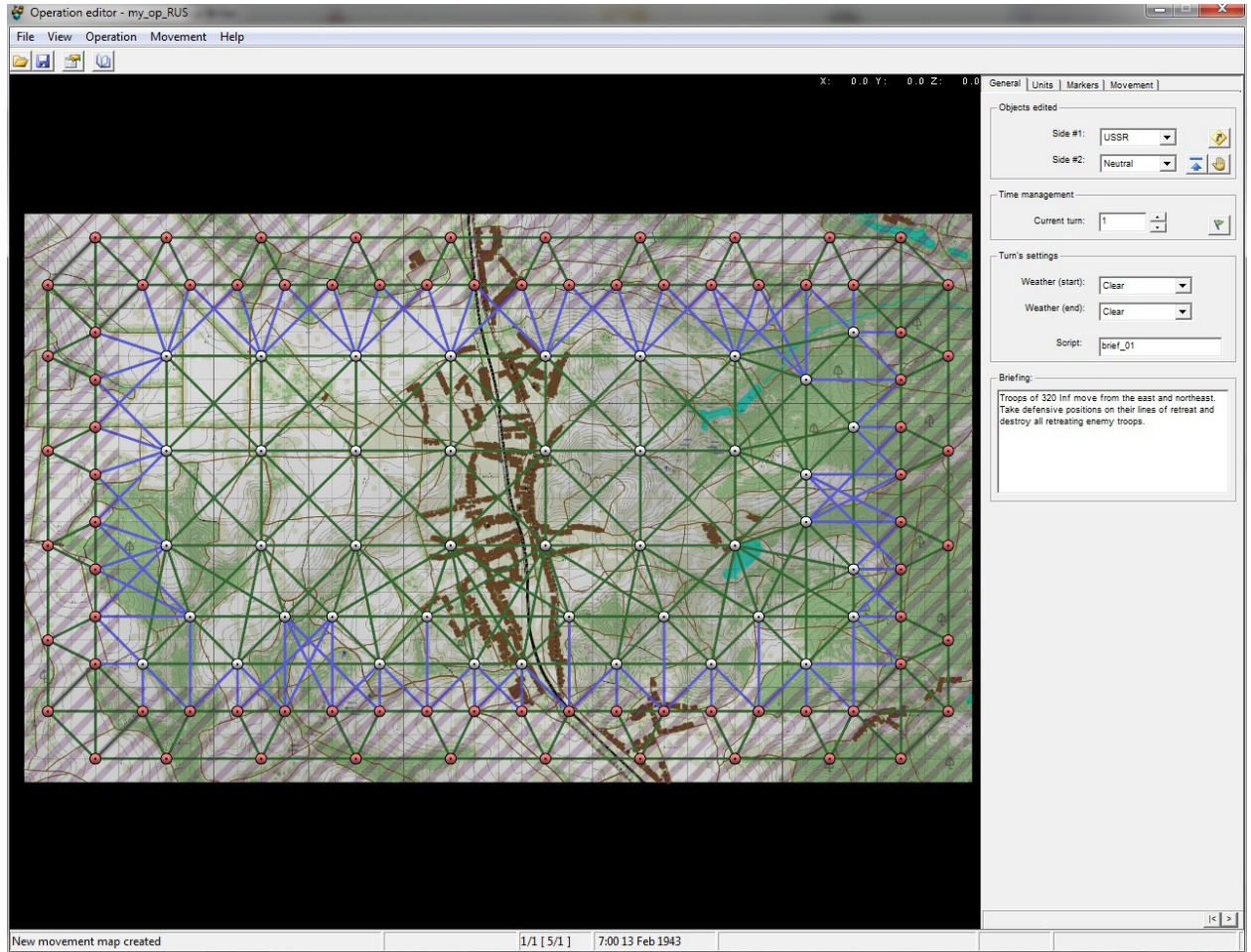


Pic. 2.3 – Progressive grid for deploying and movement



When this type of a grid is chosen, each square for reserves will contain three spots for deploying platoons (except for the side squares), squares next to reserves squares will be available for deploying only two squads.

Additional deploying spots can be added or removed with the help of **Movement** tab, using [LMB] and [RMB]. Deploying spots for reserves squares can't be added. Press [F7] to show available moving paths (pic 2.4).

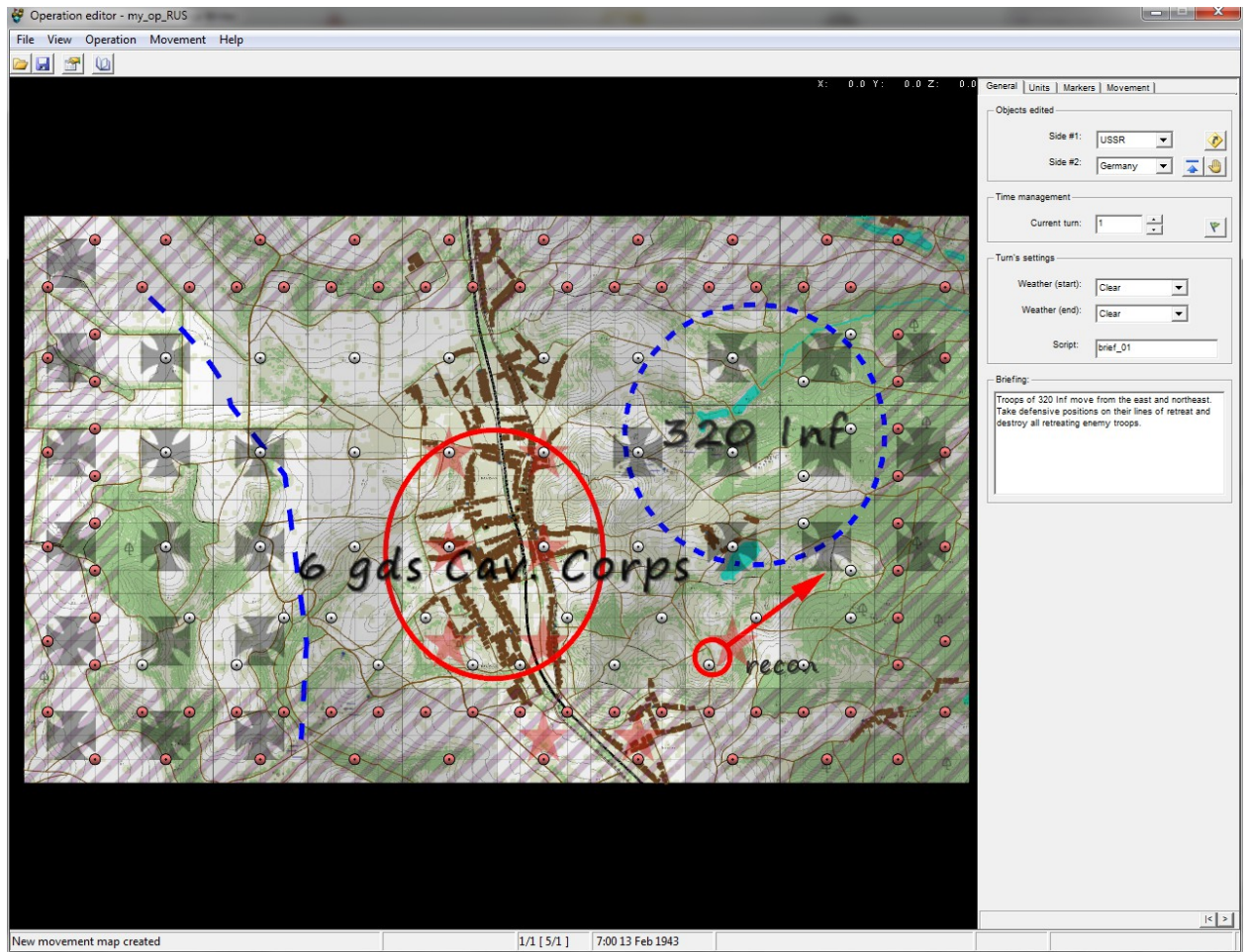


Pic. 2.4 – Available moving paths

Green lines indicate paths where two-way movement is available, blue lines indicate paths where one-way movement from reserves is available. Press [F7] once more to hide movement paths.

## 2.1 Combat area settings

First of all you should determine what squares each side will control. To change side which will control selected square, click on it with **[LMB]** or **[RMB]** (see pic. 2.5 for example).

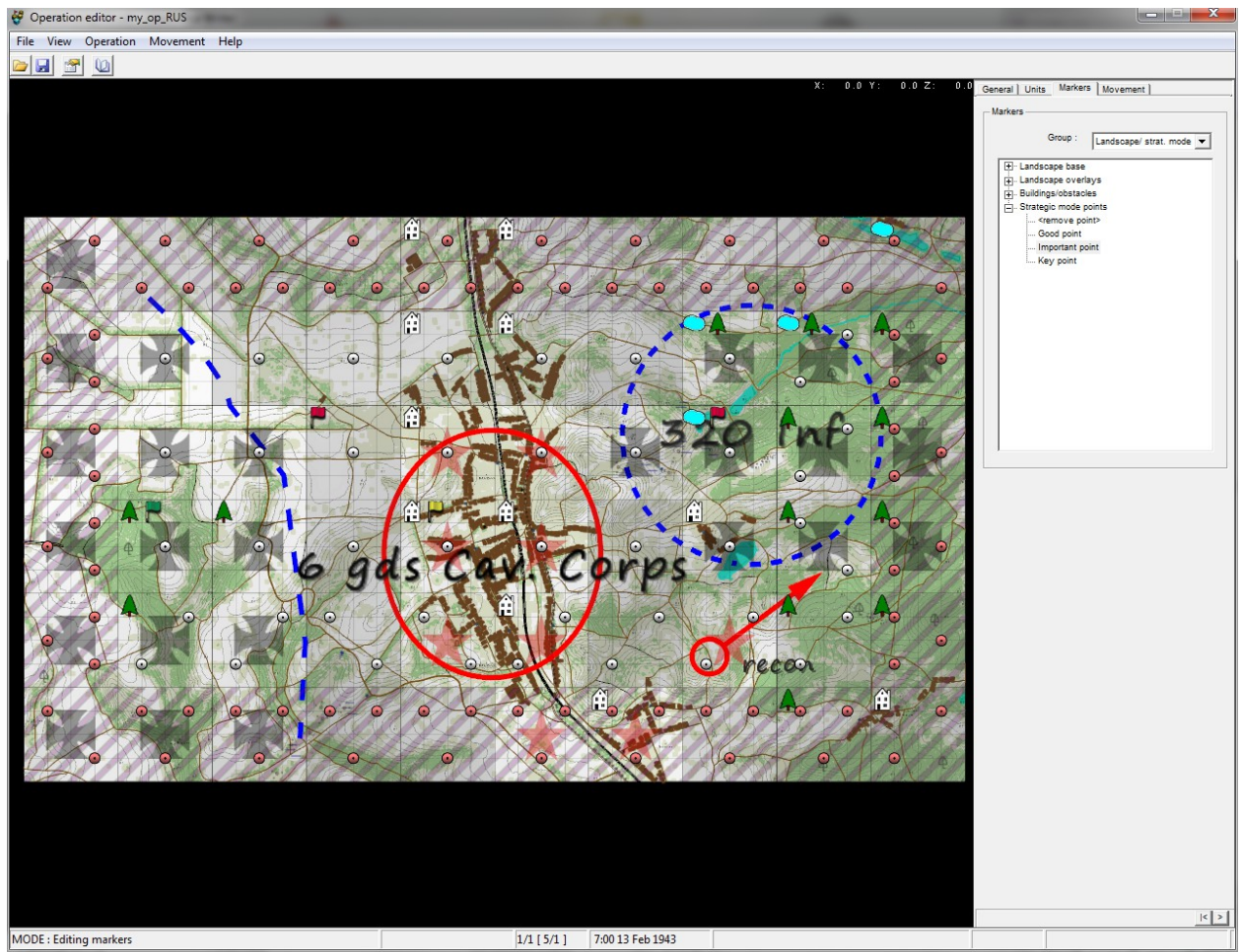


Pic. 2.5 – Example of set controlled territory for different sides

Then go to **Markers** tab, select **Landscape/Start. mode points** from drop-down menu **Group**. Press **[F3]** to show markers, set-up parameters for combat area by placing markers and key operation points for each square. See pic. 2.6 for example.

Markers on the battlefield map are shown as small icons. It is advisable that the icons correspond with the type of terraria shown on the map. To delete markers from squares use **[RMB]**, to place a marker use **[LMB]**.



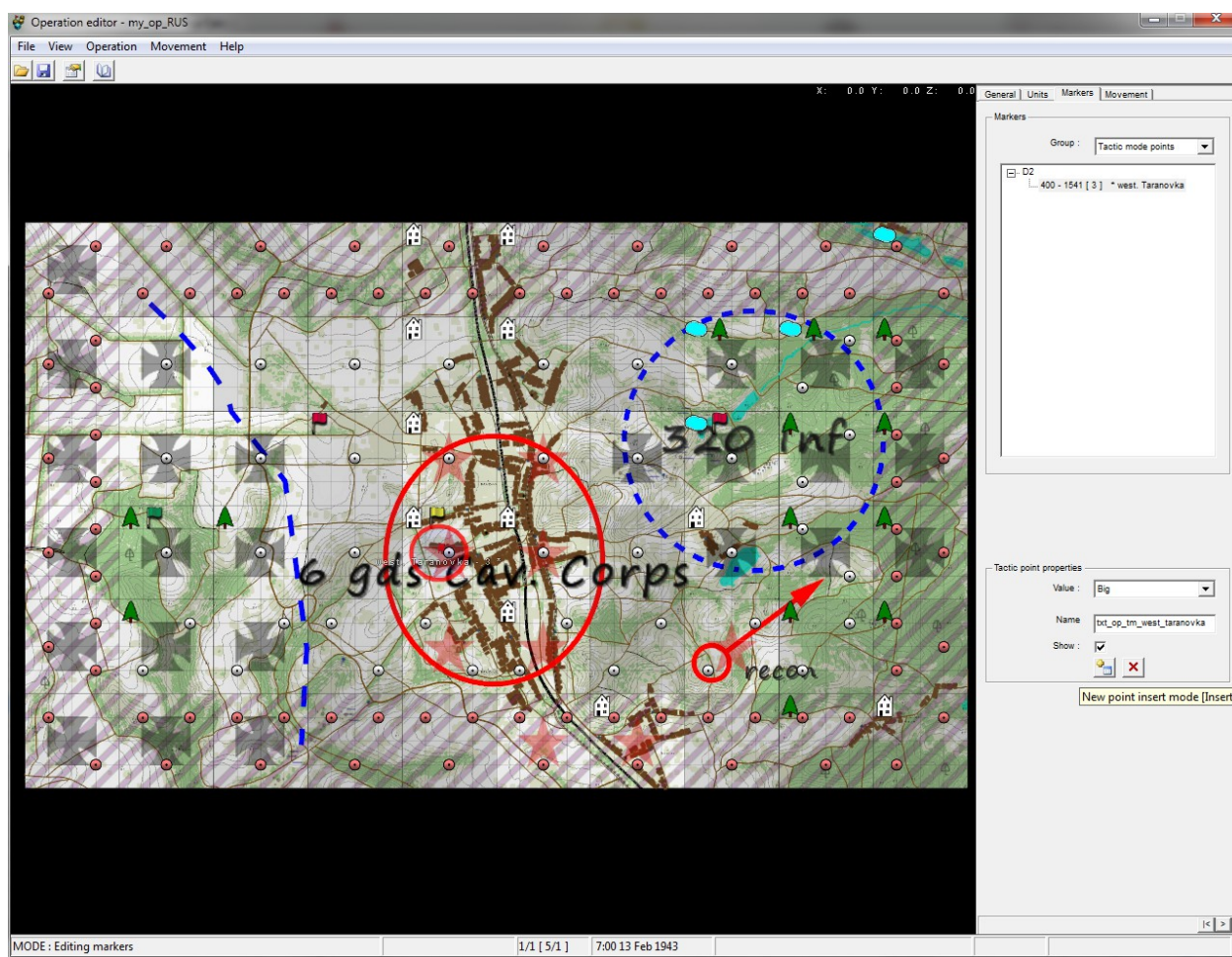


Pic. 2.6 – Example of terrain settings for an operation

Then select **Tactic mode points** from drop-down menu **Group**, press **[F5]** to display the points on the map, and add key points for tactical phase of the battle. Names for these points should be listed in 'SRC\my\_op\_RUS\_text.ods' beforehand, and in the dialogue box all you have to do is just select their name ID. To do this, click **Show** checkbox.

It is recommended to set at least one tactical key point for each square that has operational key point (flag).

To move and set the point use **[LMB]**, to rotate – **[RMB]**, to scale – **[MMB]**. See example of a key point for tactical battle on pic. 2.7.



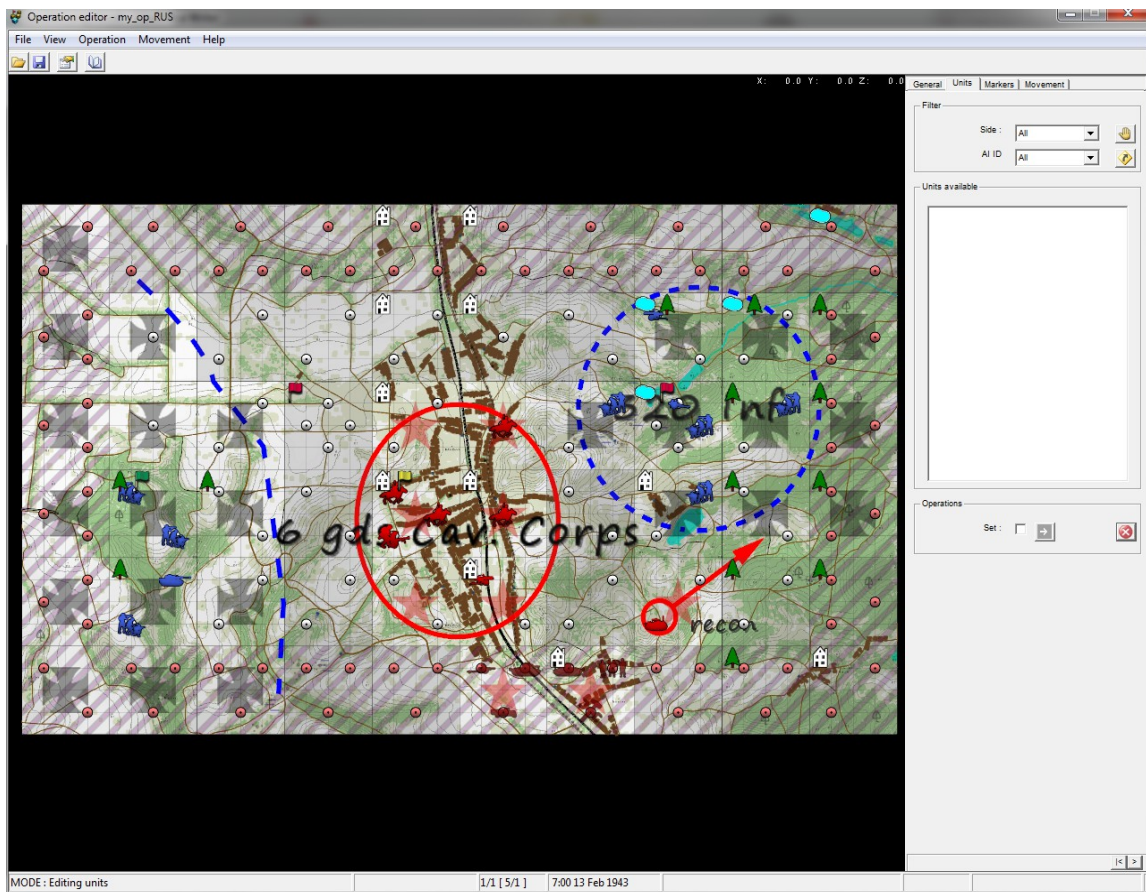
Pic. 2.7 – Example of key point for tactical battle

Save changes by pressing **[Ctrl+S]** or click on the corresponding button on the control panel.



## 2.2 Deploying platoons on the map

To deploy platoons on the map go to **Units** tab, choose troops **6 gds Cav. Corps**, **8 gds Cav.Div** and place them by clicking with **[LMB]** on chosen square. Then place troops of **320 Inf**. If somewhere on the map you want to deploy several platoons on one square, go to **Movement** tab and add deploying spots for chosen square. Example of deployed troops can be seen on pic. 2.8.

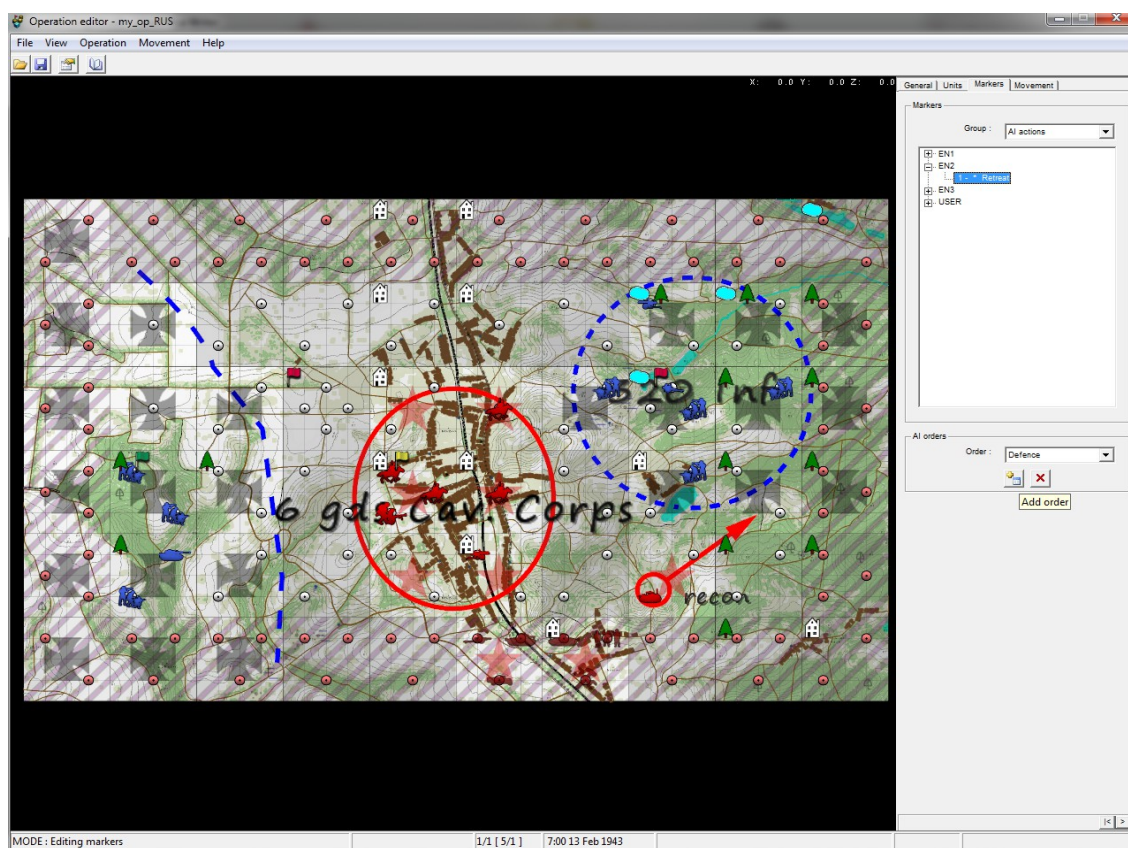


Pic. 2.8 – Example of deployed troops

Troops that are deployed on the map are marked with icons according to the type of the squad and according to what side does this squad belong (Player or Enemy). If you want the squad to appear on the map on the specified turn, first choose this turn (on **General** tab or press **[PgUp]**, **[PgDn]**), and then place the squad on the square with hatching background. In order to remove the platoon, click on it with **[RMB]**.

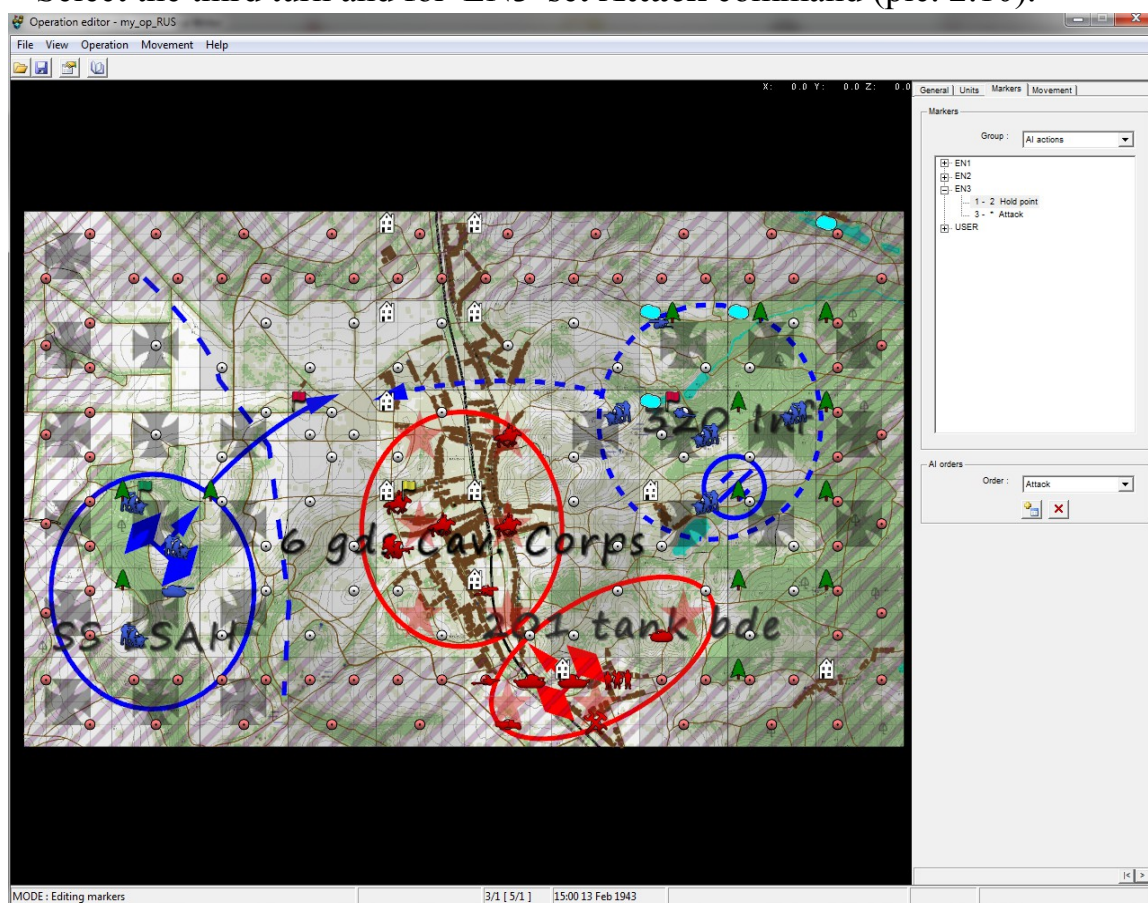
After squads are deployed, determine action logic for AI. To do this, choose **AI actions** from drop-down menu **Group** on **Markers** tab.

Set the first turn by pressing **[Home]**. Select from the list 'EN1' and set **Defence** command, then select 'EN2' and add **Retreat** command (pic. 2.9). Some AI troops will take up defensive positions, other will retreat.



Pic. 2.9 – Setting commands for enemy troops controlled by AI

Select the third turn and for 'EN3' set **Attack** command (pic. 2.10).



Pic. 2.10 – Setting commands for enemy troops controlled by AI



At the third turn of the operation western enemy group will start attack.

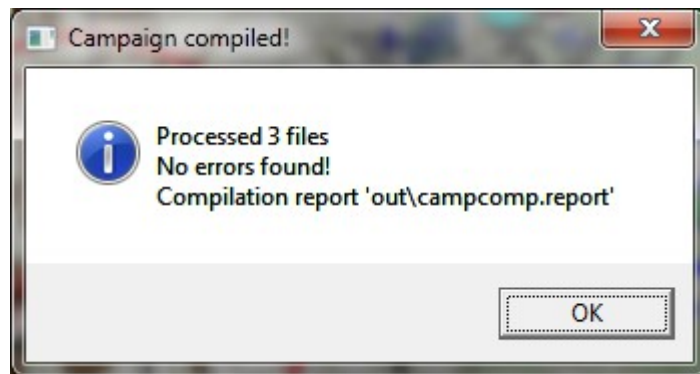
Save changes by pressing [**Ctrl+S**] or click on the corresponding button on the control panel.

Remember that you can deploy several troops in one square. To enable this feature, go to **Movement** tab and select progressive grid. This will automatically add additional spots for squads on each square: squares with hatching background will be suitable for deploying 3 squads, squares with key points and nearby squares will be suitable for deploying from 2 to 4 squads.

To manually set number of spots for each square, go to **Movement** tab and use [**LMB**] to add additional spot or [**RMB**] to remove spot from the square. To rotate spots within the square, use [**MMB**].

## 2.3 Compiling an operation

When you are done with editing your future operation, it is time to add it to the game. To do this, select in the menu **Operation\Compile script**, then choose **Operation/Compile**. When compiling is finished you will see a dialogue box with information on its results (pic. 2.11).



Pic. 2.11 – Dialogue box reporting that compilation is done successfully

If compilation was successful, new operation will be added to the list of available operations in the game menu (pic. 2.12).



Pic. 2.12 – New operation available in the game menu

### 3 Reference materials

Table 3.1 lists sprite names for different platoons.

Table 3.1

**Sprite names for different types of platoons**

Название	Тип взвода
Name	Type of the platoon
pl_air	Flight
pl_artillery	Artillery battery
pl_atinf	AT platoon
pl_cavalary	Cavalry platoon
pl_gatguns	German AT gun
pl_gtank	German tank (Pz-III)
pl_infantry	Infantry platoon
pl_mech	Platoon on half-track APCs
pl_mrifles_bmp	Motorized infantry on BMPs
pl_para	Airborne platoon
pl_recoil	Battery of recoilless guns
pl_rspec	Special purpose platoon
pl_spam	Mobile repair shop
pl_spguns	Battery of assault guns
pl_tank_t62	Tank platoon of T62/T55
pl_air_sup	Flight of transport airplanes
pl_atgm	Battery of ATGMs
pl_atrinf	AT rifle platoon
pl_cons	Draft reinforcements
pl_engtank	Tank platoon of English tanks
pl_gltank	Platoon of light tanks (Pz II)
pl_h-tank	Platoon of heavy tanks (Pz VI “Tiger”)
pl_ltank	Platoon of light tanks (T-60/T-70)
pl_mgun	Machine-gun platoon
pl_mrifles_btr	Motorized infantry on APCs
pl_pzj1	Battery of AT SPGs (Pzjager I)
pl_rhtank	Platoon of heavy tanks (KV-1)
pl_scinf	Scout platoon
pl_spec	Platoon of flamethrower tanks (Pz-III (Fl)
pl_tank	Tank platoon (T-34)
pl_truck_sup	Supply trucks
pl_apc_m113	Infantry platoon on APCs (M113)

Table 3.1 (continuation)

**Sprite names for different types of platoons**

pl_depot	Ammunition and fuel depot
pl_fthrow	Platoon of flamethrowers
pl_gscout	Scout platoon on armored cars
pl_iguns	Battery of infantry guns
pl_marder2	Battery of AT SPGs (Marder II)
pl_mortars	Mortar battery
pl_olifant	Tank platoon (“Olifant”/“Centurion”)
pl_ratel90	Fire support platoon on BMPs (“Ratel-90”)
pl_rmech	Platoon on APCs (“Universal”)
pl_scout	Scout platoon
pl_spg	Platoon of SPGs
pl_tank_m60	Tank platoon (M60)

Table 3.2 lists names of emblems for different units.

Table 3.2

**Names of emblems for different units**

Unit	Emblem
RKKA units	rkka_marks_01
Wehrmacht units	wer_marks_01
6th tank division	wer_marks_6pz
11th tank division	wer_marks_11pz
17th tank division	wer_marks_17pz
Division SS “Das Reich”	wer_marks_dr_pzgr_ss
Division SS LSAH	wer_marks_lah_pzgr_ss
Motorized division G.D.	wer_marks_gd_pzgr
521st battalion of AT SPGs	wer_marks_521_pzj_abt
79th infantry division	wer_marks_79_inf
320th infantry division	wer_marks_320_inf

Table 3.3 lists names of combat areas and their parameters.

Table 3.3

**Parameters of combat areas**

Name of the combat area (in front of the name add “polygons\”)	Maximal size of the combat area	Scale and displacement for briefing script
2T_Taranovka\2T_Taranovka.cfgpack	1, 1, 5, 6	10240.0, 12288.0, -6144.0, -7168.0
2R_Rakitnoe\2R_Rakitnoe.cfgpack	3, 1, 9, 5	14336.0, 10240.0, -8192.0, -6144.0
M_Sokolovo\M_Sokolovo.cfgpack	2, 2, 6, 6	10240.0, 10240.0, -6144.0, -6144.0
3O_Oskol\3O_Oskol.cfgpack	1, 1, 4, 3	8192.0, 6144.0, -5120.0, -4096.0
*H_Helmand\H_Helmand.cfgpack	1, 2, 6, 4	12288.0, 6144.0, -7168.0, -4096.0
*S_Susangerd\S_Susangerd.cfgpack	1, 2, 6, 4	12288.0, 6144.0, -7168.0, -4096.0
*C_Cuanavale\C_Cuanavale.cfgpack	2, 1, 4, 6	6144.0, 12288.0, -4096.0, -7168.0
K_Kr_Polana\K_Kr_Polana.cfgpack	2, 1, 5, 6	8192.0, 12288.0, -5120.0, -7168.0

\* for a tank simulator only

### 3.1 Names of squads and vehicles

Tables 3.4-3.5 list names of available squads and support units for **Red Army** and Wehrmacht.

Table 3.4

#### Available squads and support units (Red Army)

Name	Description
1	2
Rifle squads	
rkka_squad_inf_43a	rifle squad
rkka_squad_inf_43a2	rifle squad (mg.)
rkka_squad_mrifles_43a	motorized infantry squad
rkka_squad_smg_43a	squad of submachine gunners
rkka_squad_scout_43a	scout squad
rkka_squad_eng_43a	engineer squad
rkka_mg	DP machine-gun crew
rkka_ptrd	PTRD crew
rkka_ptrs	PTRS crew
rkka_flamer	ROKS-3 flamethrower crew
rkka_com_inf_plat	commander of platoon
rkka_com_inf_coy	commander of company
rkka_com_inf_bat	commander of battalion
rkka_squad_atr	AT-rifle squad
rkka_squad_mg	machine-gun squad
rkka_squad_sniper	sniper group
NKVD rifle squads	
rkka_squad_nkvd_43a	NKVD rifle squade
rkka_com_nkvd_plat	commander of NKVD platoon
rkka_com_nkvd_coy	commander of NKVD company
Tanks and APC	
rkka_uc_mk1	“Universal” MkI, APC
rkka_ba64	BA-64, armored car
rkka_t34_42_uztm	T-34 mod. 1942, tank
rkka_t34_41_stz	T-34 mod. 1941, tank
rkka_ot34_41_stz	OT-34 mod. 1941, tank
rkka_t60_41	T-60 mod. 1941, light tank
rkka_t70_42	T-70 mod. 1942, light tank
rkka_kv1_42_uztm	KV-1 mod. 1941, heavy tank
rkka_kv1_42_chkz_sw	KV-1 mod. 1942 (ChKZ), reinf. weld., heavy tank

Table 3.4 (continuation)

**Available squads and support units (Red Army)**

1	2
<b>Tanks and APC</b>	
rkka_kv1s_m42	KV-1C mod. 1942, heavy tank
rkka_kv1se_m42	KV-1C mod. 1942 (early), heavy tank
rkka_kv1_42_chkz_c	KV-1 mod. 1942 (ChKZ), cast., heavy tank
rkka_kv1_42_chkz_rfc	KV-1 mod. 1942 (ChKZ), add. cast., heavy tank
rkka_kv8_42_uztm	KV-8 mod. 1941, flamethrower tank
rkka_kv8s	KV-8C mod. 1942, flamethrower tank
rkka_kv8se	KV-8C (early) mod. 1942, flamethrower tank
rkka_mk2_4	“Matilda” Mk II, heavy tank
rkka_mk2_4cs	“Matilda” Mk II CS, heavy tank
rkka_mk3_2	“Valentine” Mk III, light tank
rkka_m3a1_stuart	M3A1 “Stuart”, light tank
rkka_squad_scoutm_43a	scout group on APC “Universal”
rkka_squad_scoutm_capt	scout group on APC Sdkfz 250 (trophy)
<b>Artillery and mortars</b>	
rkka_zis3	76,2 mm ZIS-3 field gun, mod. 1942
rkka_f22_m36	76,2 mm F-22 field gun, mod. 1936
rkka_pak40	75 mm Pak-40 field gun (trophy)
rkka_pp27	76,2 mm regimental gun, mod. 1927
rkka_53k_at	45 mm AT gun, mod. 1937
rkka_53k	45 mm battalion gun, mod. 1937
rkka_m42	45 mm AT gun, mod. 1942
rkka_maxim	7,62 mm machine-gun “Maksim”
rkka_dshk	12,7 mm machine-gun DShK mod. 1938
rkka_mt82	82 mm mortar mod. 1939
rkka_mt50	50 mm mortar mod. 1937
<b>Spotters</b>	
rkka_corr_art	artillery spotter
rkka_corr_air	air spotter

Table 3.4 (continuation)

**Available squads and support units (Red Army)**

1	2
Support	
rkka_airsup_il2_plat	flight of Il-2
rkka_airsup_po2_plat	flight of U-2 LNB
rkka_artsup_zis3_plat	battery of ZIS-3 field guns
rkka_artsup_pp27_plat	battery of regimental guns
rkka_artsup_m30_plat	battery of M-30 howitzers
rkka_artsup_bm13_plat	battery of MRL BM-13
rkka_artsup_mt120_plat	battery of regimental mortars
Other units	
rkka_gazmm	GAZ-MM, truck
rkka_com_spam	commander of repair brigade
rkka_squad_spam	repair brigade
rkka_squad_sup_mot	supply brigade on trucks
rkka_squad_sup	supply brigade (depot)
rkka_squad_cons	draft reinforcements



Table 3.5

**Available squads and support units (Wehrmacht)**

Name	Description
1	2
Infantry and grenadier squads	
wer_squad_pzgr_43a	grenadier squad on APC
wer_squad_scout_43a	scout squad on APC
wer_squad_eng_43a	engineer squad on APC
wer_squad_eng_43a2	engineer squad on APC (2)
wer_squad_engid_43a	engineer squad of inf. div.
wer_squad_engid_43a2	engineer squad of inf. div. (2)
wer_flamer	Fw 34 flamethrower crew
wer_atr	PzB 39 AT rifle crew
wer_gren	GnB 39 grenade launcher crew
wer_com_pzgr_plat	commander of platoon on APC
wer_com_scout_plat	commander of scout platoon on APC
wer_com_pzgr_coy	commander of company on APC
wer_com_pzgr_bat	commander of battalion on APC
wer_squad_atr	AT rifle squad
wer_squad_gren	grenade launcher squad
wer_squad_pzgr_43am	grenadier squad
wer_squad_sniper	sniper group
wer_squad_inf_411	infantry squad
wer_com_inf_plat	commander of platoon (inf. div.)
wer_com_inf_coy	commander of company (inf. div.).
wer_com_pzgr_coym	commander of company
wer_com_pzgr_platm	commander of platoon
SS squads	
wer_squad_ss_pzgr_43a	grenadier squad on APC
wer_com_ss_pzgr_plat	commander of squad on APC
wer_squad_ss_pzgr_43am	grenadier squad
wer_com_ss_pzgr_platm	commander of squad
wer_com_ss_pzgr_coym	commander of company
wer_com_ss_pzgr_coy	commander of company on APC

Table 3.5 (continuation)

**Available squads and support units (Wehrmacht)**

1	2
<b>Tanks and APC</b>	
wer_sdkfz251c_1	Sdkfz 251/1 ausf C, APC
wer_sdkfz251c_2	Sdkfz 251/2 ausf C, APC
wer_sdkfz251c_9	Sdkfz 251/9 ausf C, APC
wer_sdkfz251c_10	Sdkfz 251/10 ausf C, APC
wer_sdkfz250a_1	Sdkfz 251/1 (alt), armored car
wer_sdkfz250a_10	Sdkfz 251/10 (alt), armored car
wer_sdkfz232_8	Sdkfz 232 (8-rad), armored car
wer_sdkfz231_8	Sdkfz 231 (8-rad), armored car
wer_pz2f	Pz II ausf F, light tank
wer_pz2c	Pz II ausf C, light tank
wer_pz3l	Pz III ausf L, tank
wer_pz3n	Pz III ausf N, tank
wer_pz3fl	Pz III Fl, flamethrower tank
wer_pz4g	Pz IV ausf G, tank
wer_pz6h1	Pz VI ausf H1, heavy tank
wer_stug3f8	StuG III ausf F/8, AT SPG
wer_marder2_132	“Marder” II Sdkfz 132, AT SPG
wer_marder2_131	“Marder” II Sdkfz 131, AT SPG
wer_pzj1	“Pzjager” I, AT SPG
wer_marder3h	“Marder” III H, AT SPG
<b>Artillery and machine-guns</b>	
wer_pak38	5 cm Pak-38, AT gun
wer_pak35	3,7 cm Pak-35, AT gun
wer_leig18	7,5 cm leIG-18, infantry gun
wer_leig18e	7,5 cm leIG-18 (early), infantry gun
wer_pak40	7,5 cm Pak-40, AT gun
wer_lefh18m	10,5 cm leFH-18, howitzer
wer_grw34	8 cm GrW.34, mortar
wer_grw36	5 cm GrW.36, mortar
wer_mg42	7,92 mm MG-42, machine-gun
<b>Spotters</b>	
wer_corr_art	artillery spotter
wer_corr_air	air spotter

Table 3.5 (continuation)

**Available squads and support units (Wehrmacht)**

1	2
Support	
wer_airsup_ju87_plat	flight of Ju-87
wer_airsup_fw190_plat	flight of Fw-190
wer_artsup_lefh_plat	battery of leFH-18
wer_artsup_sig33_plat	battery of sIG-33
Other units	
wer_opel_blitz_36	“Opel Blitz” 36, truck
wer_com_spam	commander of repair brigade
wer_squad_spam	repair brigade
wer_squad_sup_mot	supply brigade on trucks
wer_squad_sup	supply brigade (depot)
wer_squad_cons	draft reinforcements

### 3.2 Names of modern squads and vehicles

Table 3.6 lists names of available modern squads and support units.

Table 3.6

#### Available modern squads and support units

Name	Description
1	2
<b>Soviet army</b>	
Tanks	
sa_t62	T-62, medium tank
sa_t55	T-55, medium tank
sa_to55	TO-55, flamethrower tank
Artillery	
sa_spg9	AT grenade launcher SPG-9 “Koppe”
sa_2b14	82 mm mortar 2B14 “Podnos”
sa_9k14m	ATGM 9K14M “Malyutka”
sa_zu23_2	Antiaircraft emplacement ZU-23-2
sa_gaz66_zu23_2	Antiaircraft emplacement ZU-23-2 on GAZ-66
APCs and BMPs	
sa_btr60pb	BTR-60PB
sa_brdm2	BRDM-2, armored car
sa_bmp1	BMP-1
Motorized infantry	
sa_squad_btr60pb	Squad on BTR-60PB
sa_com_btr60pb	Commander on BTR-60PB
sa_mg_btr60pb	Machine-gun squad on BTR-60PB
sa_com_mg_btr60pb	Commander of machine-gun squad on BTR-60PB
sa_art_corr	Artillery spotter on BTR-60PB
sa_squad_bmp1	Squad on BMP-1
sa_com_bmp1	Commander on BMP-1
sa_mg_bmp1	Machine-gun squad on BMP-1
sa_com_mg_bmp1	Commander of machine-gun squad on BMP-1
sa_com_coy_btr60pb	Commander of company on BTR-60PB
sa_com_coy_bmp1	Commander of company on BMP-1
sa_com_at_btr60pb	Commander of AT platoon on BTR
sa_com_bat	Commander of motorized infantry battalion

Table 3.6 (continuation)

**Available modern squads and support units**

1	2
sa_com_mt_plat	Commander of mortar platoon
Other units	
sa_squad_spam	Mobile repair shop
sa_squad_sup	Supply brigade
Support	
sa_artsup_d30_plat	Battery of D-30
sa_artsup_bm21_plat	Battery of BM-21
sa_artsup_mt120_plat	Battery of regimental mortars
sa_airsup_mi24d_plat	Flight of Mi-24D
sa_airsup_mig23bn_plat	Flight of Mig-23BN
<b>Afghan Mujahideen</b>	
Infantry	
ira_squad_inf	Infantry group
ira_squad_at	AT group
ira_scout_inf	Scout group
ira_com_inf_plat	Commander of detachment
ira_com_inf_coy	Commander of battlefront
Artillery	
ira_zis3	76,2 mm ZIS-3 field gun (trophy)
ira_spg9	AT grenade launcher SPG-9 “Kopye” (trophy)
ira_dshk3	12,7 mm large-caliber DShK machine-gun on tripod (trophy)
ira_mt82	82 mm mortar (trophy)
ira_zu23_2	Antiaircraft emplacement ZU-23-2 (trophy)
Other units	
ira_squad_sup	Support group
Support	
ira_artsup_gradp_plat	Battery of Grad-P
<b>Army of Iran</b>	
Motorized infantry	
ir_squad_m113	Motorized infantry squad on APC M113
ir_com_m113	Commander of platoon on APC M113
ir_com_coy_m113	Commander of company on APC M113

Table 3.6 (continuation)

**Available modern squads and support units**

1	2
<b>Infantry</b>	
ir_squad_inf	Infantry squad
ir_com_inf_plat	Commander of infantry squad
ir_com_inf_coy	Commander of infantry company
<b>Airborne troops</b>	
ir_squad_para	Squad of paratroopers
ir_com_para_plat	Commander of paratroopers platoon
ir_com_para_coy	Commander of paratroopers company
<b>Tanks</b>	
ir_m60a1	MBT M60A1
ir_chief_mk5	MBT “Chieftain” Mk.5
<b>Artillery</b>	
ir_m40	M40 recoilless gun
<b>Other units</b>	
ir_squad_spam	Mobile repair shop
ir_squad_sup	Supply brigade
<b>Army of Iraq</b>	
<b>Motorized infantry</b>	
iq_squad_btr60pb	Squad on BTR-60PB
iq_com_btr60pb	Commander on BTR-60PB
iq_squad_bmp1	Squad on BMP-1
iq_com_bmp1	Commander on BMP-1
iq_art_corr	Artillery spotters on BTR-60PB
<b>Tanks</b>	
iq_t62	T-62, medium tank
iq_t55	T-55, medium tank
<b>APCs and BMPs</b>	
iq_btr60pb	BTR-60PB
iq_bmp1	BMP-1
<b>Artillery</b>	
iq_b10	B-10 recoilless gun
iq_mt82	82 mm mortar
iq_9k14m	ATGM 9K14M “Malyutka”
<b>Infantry</b>	
iq_squad_inf	Infantry squad
iq_com_inf_plat	Commander of infantry squad
iq_com_inf_coy	Commander of infantry company



Table 3.6 (continuation)

**Available modern squads and support units**

1	2
Other units	
iq_squad_spam	Mobile repair shop
iq_squad_sup	Supply brigade
Support	
iq_artsup_m30_plat	Battery of M-30
iq_airsup_mi25_plat	Flight of Mi-25
<b>Army of Angola</b>	
Infantry	
an_squad_inf	Infantry squad
an_squad_mil	Militia squad
an_com_inf_plat	Commander of infantry platoon
an_com_inf_coy	Commander of infantry company
Tanks	
an_t55	T-55, medium tank
APCs and BMPs	
an_btr60pb	BTR-60PB
an_bmp1	BMP-1
an_gaz66	GAZ-66, truck
Artillery	
an_zis3	76,2 mm ZIS-3 field gun
an_b10	B-10 recoilless gun
an_b11	B-11 recoilless gun
an_dshk3	12,7 mm large-caliber DShK machine-gun on tripod
an_mt82	82 mm mortar
an_zu23_2	Antiaircraft emplacement ZU-23-2
Motorized infantry	
an_squad_btr60pb	Squad on BTR-60PB
an_com_btr60pb	Commander of platoon on BTR-60PB
an_squad_bmp1	Squad on BMP-1
an_com_bmp1	Commander of platoon on BMP-1
Other units	
an_squad_sup	Supply brigade
an_squad_cons	Draft reinforcements

Table 3.6 (continuation)

**Available modern squads and support units**

1	2
<b>Cuban volunteers</b>	
APCs and BMPs	
cub_btr60pb	BTR-60PB
cub_brdm2	BRDM-2
Tanks	
cub_t55	T-55, medium tank
cub_t62	T-62, medium tank
Artillery	
cub_b11	B-11 recoilless gun
cub_zu23_2	Antiaircraft emplacement ZU-23-2
Motorized infantry	
cub_squad_btr60pb	Squad on BTR-60PB
cub_com_btr60pb	Commander of platoon on BTR-60PB
Other units	
cub_squad_spam	Repair brigade
Support	
cub_artsup_bm21_plat	Battery of BM-21
cub_artsup_m30_plat	Battery of M-30
cub_airsup_mig23bn_plat	Flight of Mig-23BN
cub_airsup_mi25_plat	Flight of Mi-25
<b>Republic of South Africa defense forces</b>	
APCs and BMPs	
sar_ratel90	BMP "Ratel-90"
sar_ratel20	BTR "Ratel-20"
sar_ratel_cmd	"Ratel Command"
Tanks	
sar_olifant	MBT "Olifant Mk.1"
Artillery	
sar_vecm3	81 mm mortar "Vektor M3"
sar_milan	ATGM "Milan"
Motorized infantry	
sar_squad_ratel90	Squad on BMP "Ratel-90"
sar_squad_ratel20	Squad on BTR "Ratel-20"
sar_com_ratel_cmd	Commander of platoon on "Ratel"
sar_com_coy_ratel_cmd	Commander of company on "Ratel"
sar_art_corr	Artillery spotter on "Ratel"

Table 3.6 (continuation)

**Available modern squads and support units**

1	2
<b>Support</b>	
sar_airsup_alouette3_plat	Flight of “Alouette-3”
sar_airsup_impala_plat	Flight of “Impala” attack planes
sar_artsup_g5_plat	Battery of G-5
<b>UNITA troops</b>	
<b>Vehicles</b>	
un_btr60pb	BTR-60PB (trophy)
un_gaz66	GAZ-66, truck (trophy)
un_bmp1	BMP-1 (trophy)
<b>Tanks</b>	
un_t55	T-55, medium tank (trophy)
<b>Artillery</b>	
un_zis3	76,2 mm ZIS-3 field gun (trophy)
un_b10	B-10 recoilless gun (trophy)
un_b11	B-11 recoilless gun (trophy)
un_m40	M-40 recoilless gun (trophy)
un_dshk3	12,7 mm large-caliber DShK machine-gun on tripod (trophy)
un_vecm3	81 mm “Vektor M3” mortar
un_milan	ATGM “Milan”
un_zu23_2	Antiaircraft emplacement ZU-23-2 (trophy)
<b>Infantry</b>	
un_squad_inf	Infantry group
un_scout_inf	Scout group
un_com_inf_plat	Commander of infantry platoon
un_com_inf_coy	Commander of infantry company

To set tank or SPG as a commander of the platoon (battery) add to its name “\_com”. For example, description for the soviet platoon commander on T-62 tank is: “sa\_t62\_com”.

### 3.3 The logic of the operation

The logic of the operation is described in the file `my_op_RUS_scripts.engcfg`. The function **at\_start()** - the actions before the operation start and to declare variables, in **at\_end()** - actions at the end of the operation (summing-up and delivery of rewards).

The function **turn\_any()** - actions at the beginning of each turn (except the first turn). In **turn\_??()** functions write actions at the beginning of the ?? turn.

Sequence of function calls:

`at_start(), turn_02(), turn_any(), turn_03(), turn_any(), ... at_end()`

Any block may be missing.

Table 3.7 shows the script commands that allow you to organize the logic of the operation.

<X> - variable | constant, <V> - variable, <C> - constant

Table 3.7

Script orders		
Name	Arguments	Description
1	2	3
<b>Flow Control</b>		
goto, <L>	label	goto label <L>
call, <F>	function name	call function <F>
ret   ret, <C>	level	return from function back to <C> levels (by default is 1)
loop, <V>, <L>	variable, label	goto label <L> while <V> != 0, and <V> decreases by 1
<b>Delays</b>		
delay, <X>	time, seconds	wait <X> seconds
break		break script
nop		no operation
<b>Stack</b>		
push, <X1>, <X2>, ...	data values	put values to stack
pop   pop, <V1>, <V2>, ...	list of variables	remove values from stack and put it to variables
<b>Skipping or running the following command (branching)</b>		
if_eq, <X1>, <X2>		if <X1> == <X2>, then execute next command else skip it
if_ne, <X1>, <X2>		if <X1> != <X2>, then execute next command else skip it
if_le, <X1>, <X2>		if <X1> <= <X2>, then execute next command else skip it
if_ge, <X1>, <X2>		if <X1> >= <X2>, then execute next command else skip it
if_l, <X1>, <X2>		-
if_g, <X1>, <X2>		-

Table 3.7 (continue)

## Script orders

1	2	3
<b>Declaring a variable (or a change in its value)</b>		
let, <V>, <X>	variable name, value	<V> = <X>
<b>Arithmetic operations</b>		
inc   inc, <V>	variable	<V> = <V> + 1, if variable is not specifying value on top of stack is incremented
dec   dec, <V>	variable	<V> = <V> - 1, if variable is not specifying value on top of stack is decremented
add, <X1>, <X2>, <V>		<V> = <X1> + <X2>
sub, <X1>, <X2>, <V>		<V> = <X1> - <X2>
mul, <X1>, <X2>, <V>		<V> = <X1> * <X2>
div, <X1>, <X2>, <V>		<V> = <X1> / <X2>
<b>Bitwise logical operations</b>		
not, <X>, <V>		<V> = ~<X>
and, <X1>, <X2>, <V>		<V> = <X1> & <X2>
or, <X1>, <X2>, <V>		<V> = <X1>   <X2>
count1, <X>, <V>		<V> = the number of bits equal to one in <X>
test, <X1>, <X2>, <V>	flags, mask	<V> = ( <X1> & <X2> ) == <X2> ? 1 : 0
test1, <X1>, <X2>, <V>	flags, mask	<V> = ( <X1> & <X2> ) != 0 ? 1 : 0



Table 3.7 (continue)

Script orders		
1	2	3
<b>Selection and restriction</b>		
min, <X1>, <X2>, ..., <V>		<V> = min from Xi
max, <X1>, <X2>, ..., <V>		<V> = max from Xi
clamp, <V1>, <X1>, <X2>, <V>		<V> = min( <X1>, max( <V1>, <X2> )
<b>Miscellaneous</b>		
*dump		output all variable states to a log file
*log   log, <X1>, <X2>, ...		output common info or specified variable states to a log file
<b>Triggers on the operational phase</b>		
plats_in_area, <pool>, <rectangle area>, <V>		<V> = controllable platoons count from <pool> in <rectangle area>. Rectangle is 4 digits: left-top, right-bottom.
not_ctrl_plats, <pool>, <V>		<V> = broken platoons count from <pool>
is_plat_destr, <platoon>, <V>		<V> = ( if <platoon> is controllable ) ? 0 : 1
<b>Displays information on the operational phase</b>		
add_achiv, <A1>, <A2>, ...		add achievements <A1>, <A2>, ...
add_score, <side>, <V>, <C>, <T>		score[<side>] += <V> * <C> / 10. If specified <T> (text) then it priont on screen. <T> is text indentifier from local operation text pool.
brief_text, <T1>, <T2>, ...		text output. <Ti> is text indentifier from local operation text pool.
<b>AI orders</b>		
order, <order type>, <AI>, <X1>, <X2>	order type, AI marker, base point coords	send order <order type> to <AI> with base point coords: { x = <X1>, z = <X2> } Orders: stop, attack, recon, retreat, defence

\* output to out\i\_script\_proc.log