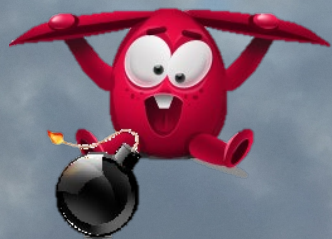


DCS WORLD *DYNAMIC WEATHER* *Rev 3*



This is a RedRabbit Production

In the DCS Mission Editor create a new mission or edit an existing one you would like to add dynamic weather to.

For new missions you may want to add a pilotable plane to test your weather affects. You probably should go ahead and add some “Smoke” markers to help show the wind strength and direction.

Select the Weather “Cloud Icon”

This will automatically come up in Static

At this point you could set Cloud Levels and Rain, but I believe the settings in Dynamic appear to override these.

The Dynamic Tab does not appear to be in the latest version of DCS World, but older missions with Dynamic Weather will open in the new Dynamic Weather Dialog tab



Set desired date and time for mission

By selecting the “Sun and Moon” carrot the slider can be used to see the location of the sun or moon and adjust the mission time.

Set Temperature (Surface Temperature) in Celsius

BARIC SYSTEM

Cyclone are Low Pressure Systems with wind rotating counter-clockwise around the center

Anti-Cyclones are High Pressure Systems with wind rotating clockwise around the center

SYSTEMS QUANTITY

Set the quantity of highs and/or lows

PRESSURE DEVIATION

Sets the barometric pressure/strength of the system in Pa (Pascals) with 0 being calm, + for a High or – for a Low. The larger the number the stronger the system will be (See the section System Strength for more information).

TIME AND WEATHER

START

21

June

2016

6

:

5

:

0

-1 h

+1 h

Sun And Moon

CONDITIONS

< > 20

T °C

DYNAMIC WEATHER

BARIC SYSTEM

CYCLONE

SYSTEMS QUANTITY

< > 1

 OF

< > 3

PRESSURE DEVIATION

< > -1352

 Pa

GENERATE

Cyclones

X: < > 366508

Y: < > -300650

Pressure spread < > 915201.958415

Ellipticity < > 0.987488

Pressure excess < > -1352

Rotation < > -1.355449

X: < > 569354

Y: < > -923004

Pressure spread < > 969099.810978

Ellipticity < > 0.987488

Select “Generate” and the systems will be randomly placed on the map.

Coordinates/Location, CenterZ & CenterX

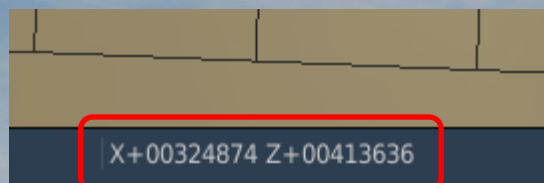
L Alt + Y will set the reading in F10 map to different cords

0,0 varies from map to map and may not be the center

X is in the Latitude (vertical or North-South)

Y or Z is in the Longitude (horizontal or East-West)

All numbers are in meters



See “DCS MAP COORDNATES” Section for the different map coordinates and 0,0 location

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June

2016

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Pressure spread

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Ellipticity

< > 0.987488

Pressure_Spread is the size of the system radius in meters. A spread of 50000 will fill one 100 km (54 nm) Grid Square, while a system spread of 1,000,000 will fill the map.

Ellipticity

Ellipticity is the shape of the system

Less than 1 system is a circle

The greater the number the more it is stretched

The more the system is stretched the higher the wind shear will be on the long axis of the ellipse.

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+1 h

Sun And Moon

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Ellipticity

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Pressure_Excess is the strength (Barometric Deviation/Pressure) of the system in Pa (Pascals) either + for a High or – for a Low. Below is a chart showing an example of Barometric pressures in known scales. The Pressure_Excess may or may not follow these numbers so you will need to experiment as needed to get the effect you are looking for.

Barometric Pressure Example

Low	Rain				Change				Fair				High
Mb													
960	970	980	990	1000	1010	1015	1020	1030	1040	1050	1060	1070	
Pa													
96K	97K	98K	99K	100K	101K	101.5K	102K	103K	104K	105K	106K	107K	
In Hg													
28.3	28.6	28.9	29.2	29.5	29.8	29.97	30.1	30.4	30.7	31.0	31.3	31.6	
Mb						Mid							
960	970	980	990	1000	1010	1015	1020	1030	1040	1050	1060	1070	
Deviation													
-5500	-4500	-3500	-2500	-1500	-500	0	500	1500	2500	3500	4500	5500	

Rotation

Changing Rotation will change the direction the system is facing.

The front face of a system has the highest winds. This can be seen on both round and elliptical systems. On elliptical systems the most powerful sides are on the long axis. Setting the rotation allows you to spin the system.

1 puts the elliptical long axis @ 11 to 5 o'clock.

3 puts the elliptical long axis @ 9 to 3 o'clock.

TIME AND WEATHER

START

21
June
2016

6
:
5
:
0

-1 h
+1 h

Sun And Moon

CONDITIONS

< > 20
T °C

DYNAMIC WEATHER

BARIC SYSTEM
CYCLONE

SYSTEMS QUANTITY
< > 1
OF
< > 3

PRESSURE DEVIATION
< > -1352
Pa

GENERATE

Cyclones

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Pressure spread
< > 969099.810978

Ellipticity
< > 0.987488

Storm Strength

There are two settings that affect the strength of the storm systems. The first is **Pressure_Spread** the larger the spread the weaker the winds, and the smaller the spread the higher the winds. The second is the **Pressure_Excess** this works opposite of spread the larger the number the stronger the winds, the smaller the number creates weaker winds. So a system with a small spread and a large pressure excess will have extreme winds, while a large spread with a low pressure number will have low wind speed and little effect on the maps weather.

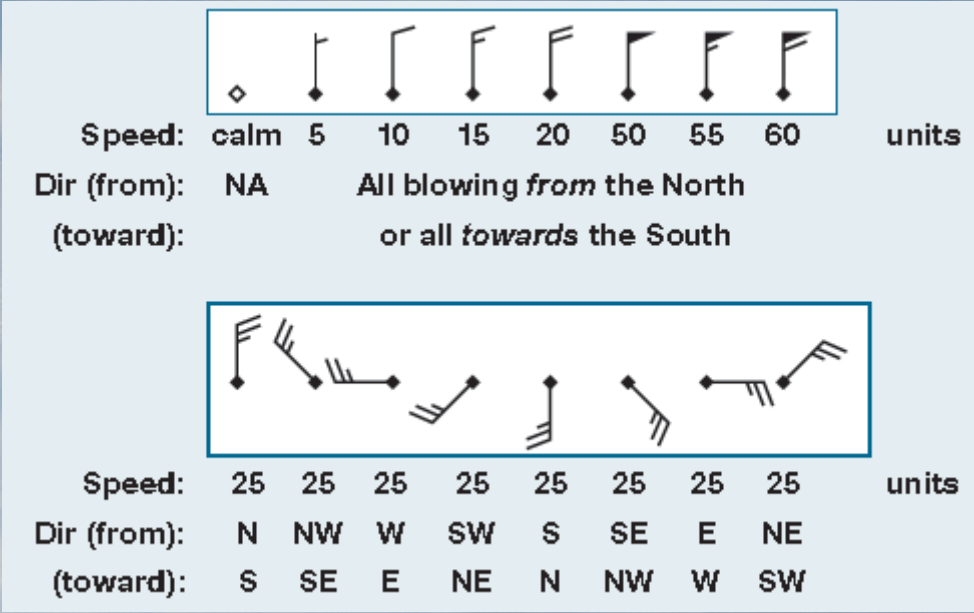


Wind Direction

The staff part of a wind barb shows wind direction. The dot end of the staff is where the wind is blowing to, while the top of the staff shows the direction from which the wind is coming.

Wind Speed

Wind speed is indicated by feathers added to the top of the staff. These feathers show wind speed adjusted to the nearest 5 kt increment. A short feather represents a 5 kt average wind speed. A long feather equals 10 kt. A pennant or flag is used to show a 50 kt wind speed.



At this point you can set items Turbulence, Fog, Dust-Smoke and Visibility as you would in Static Weather.

Give the newly created weather a unique name to make it easier to find and hit the save “disk icon”. This file is now located in your “Saved Games” location, typically as below:

C:\Users\“name”\Saved
Games\DCS“version”\MissionEditor\weather\dynamic





DCS MAP COORDINATES



Caucasus

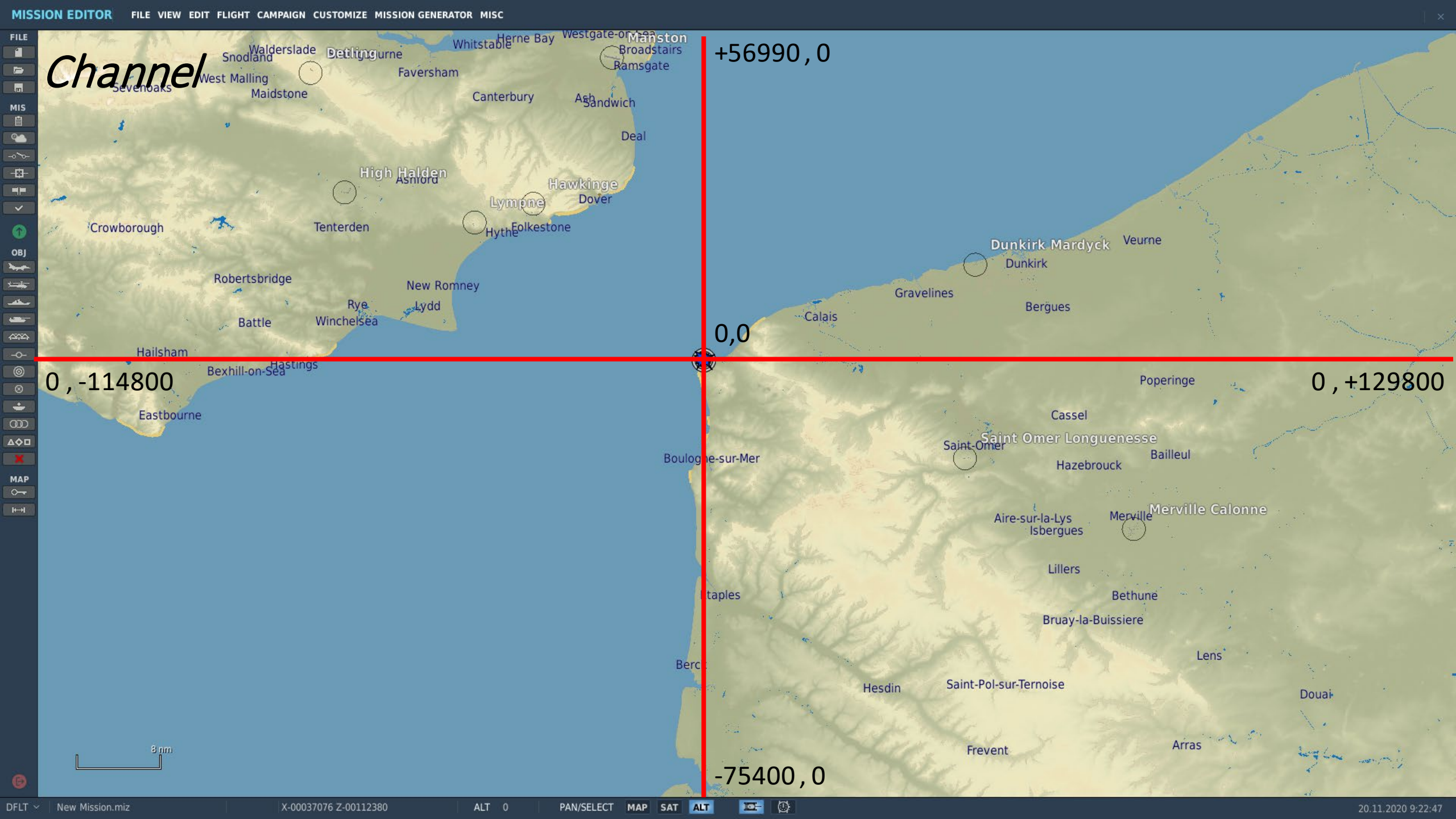
+345000, 0

0, 0

0, -559000

0, +1129000

-564000, 0



Channel

+56990, 0

0, 0

0, -114800

0, +129800

-75400, 0

8 nm

0, -999198

-297594,0

0,0

0 , +499198

0 100.15 MHz
246 Andersen AFB
100.10 MHz Antonio B. Won Pat Intl
110.90 MHz
103.50 MHz
103.80 MHz
Chan 105

50 nm

FILE

MIS

OBJ

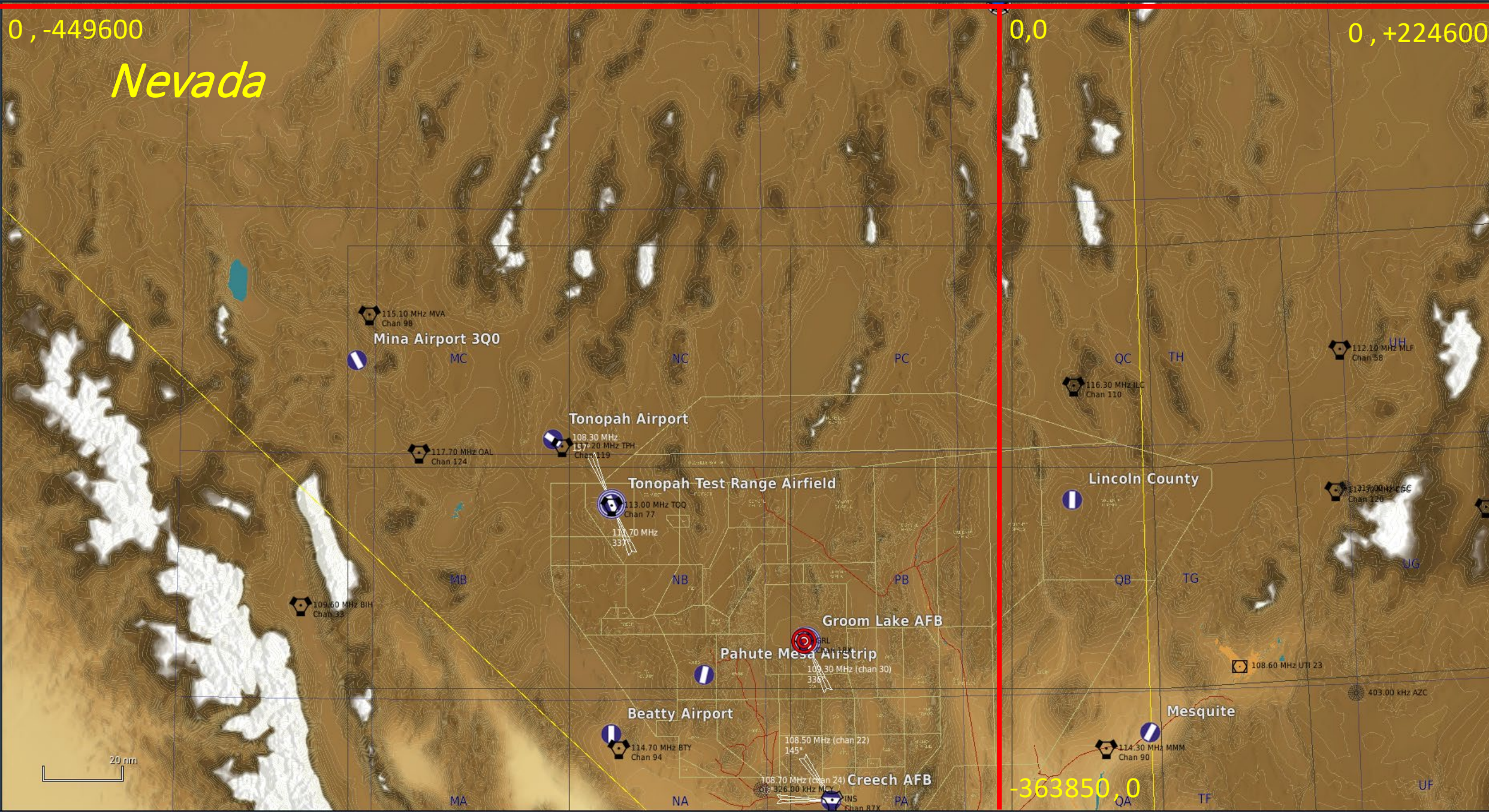
MAP

0 , -449600

Nevada

0,0

0 , +224600



- Mina Airport 3Q0
115.10 MHz MVA Chan 98
MC
- Tonopah Airport
108.30 MHz
157.20 MHz TPH Chan 119
117.70 MHz OAL Chan 124
- Tonopah Test Range Airfield
113.00 MHz TOQ Chan 77
117.70 MHz 337
- Groom Lake AFB
108.30 MHz (chan 30) 338
- Pahute Mesa Airstrip
108.70 MHz (chan 24) 338
108.50 MHz (chan 22) 145
- Beatty Airport
114.70 MHz BTY Chan 94
- Creech AFB
108.70 MHz (chan 24) 338
108.50 MHz (chan 22) 145
- Mesquite
114.30 MHz MMM Chan 90
- Lincoln County
116.30 MHz ILC Chan 110
112.10 MHz MLF Chan 58
117.30 MHz HHC Chan 120
108.60 MHz UTI 23
403.00 kHz AZC

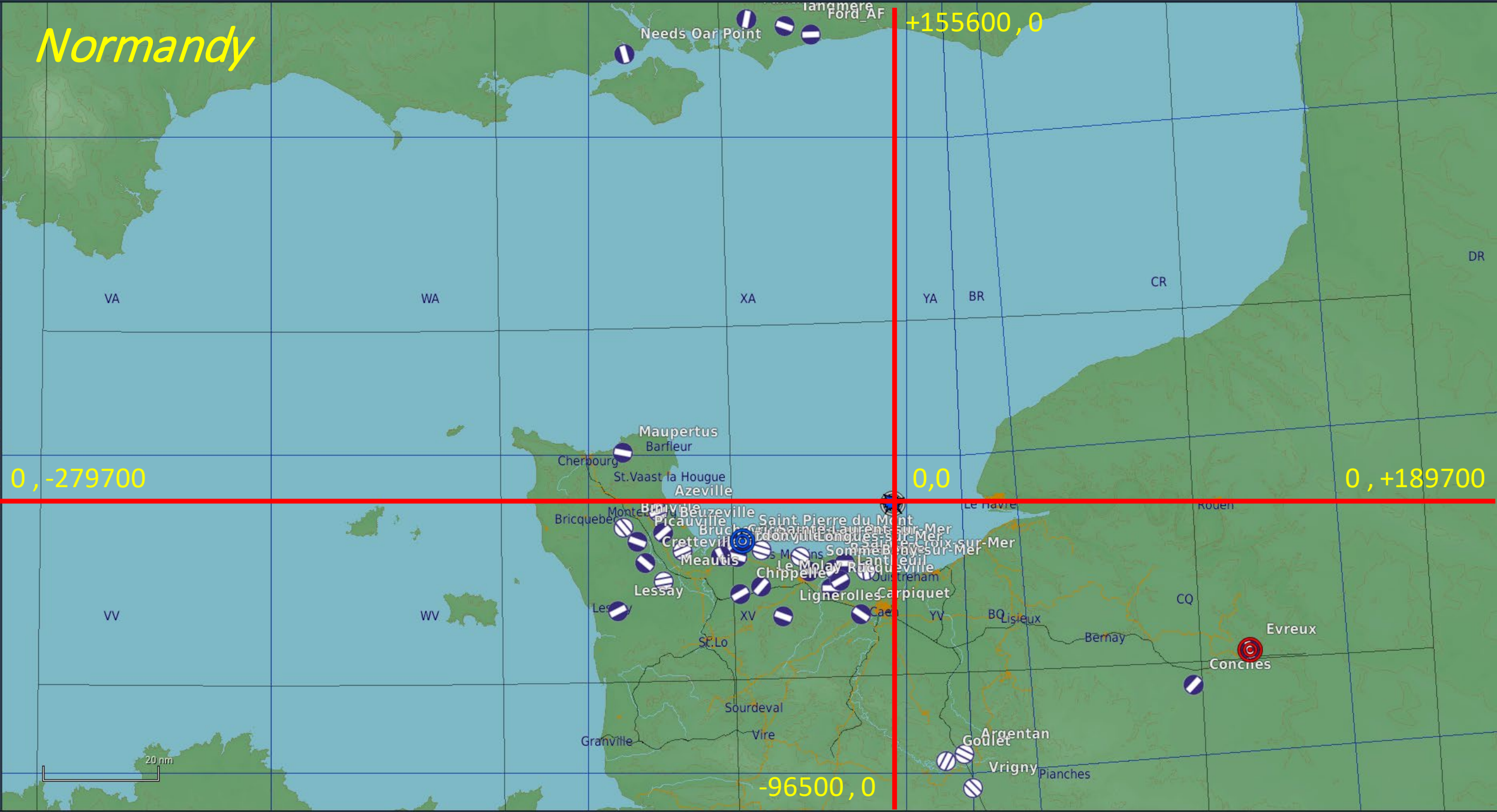
-363850,0

FILE

MIS

OBJ

MAP

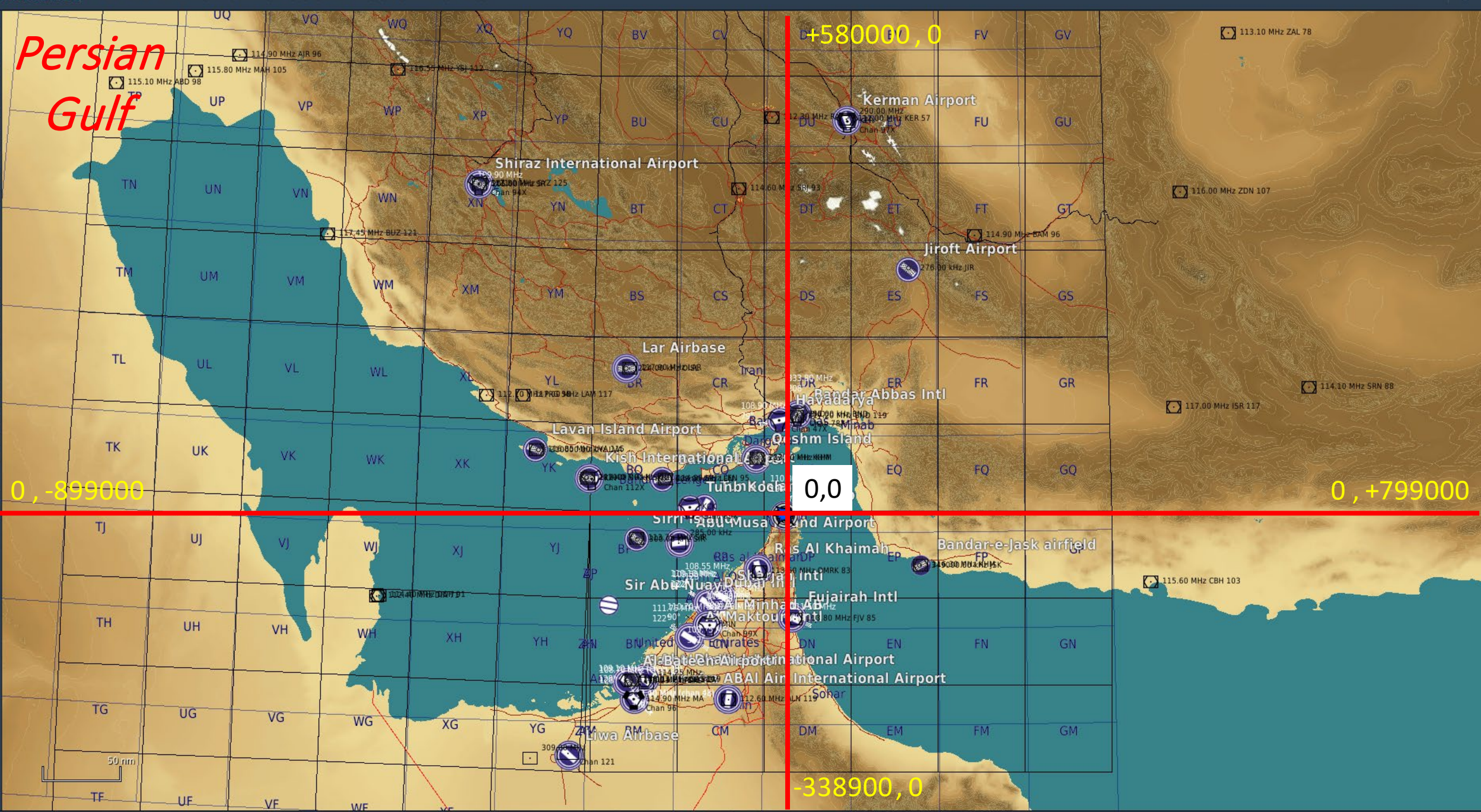


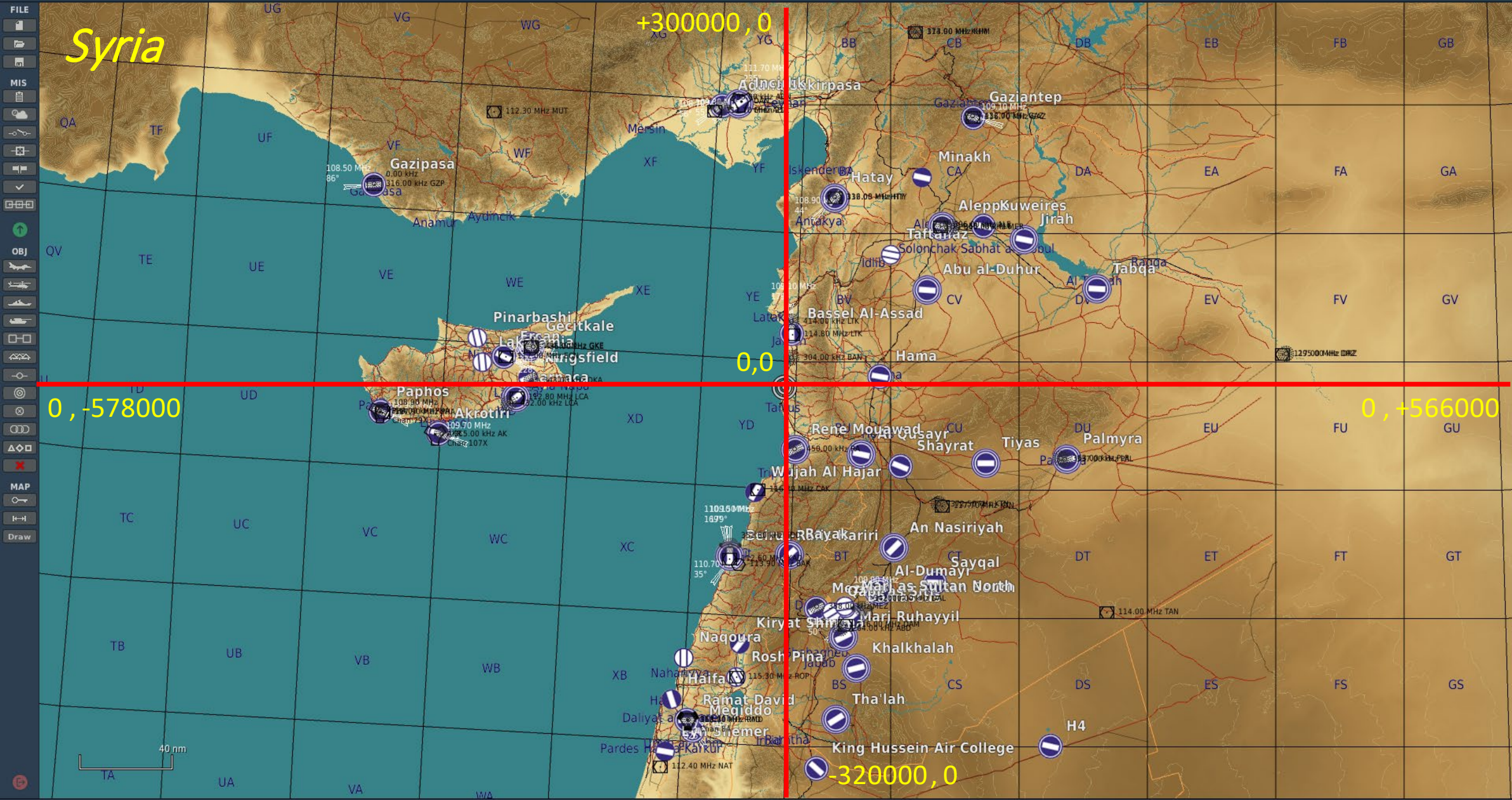
FILE

MIS

OBJ

MAP





Special Thanks to:

Shifty Mover

<https://youtu.be/EnRi7eY1yt4>

Editing Weather LUA FILE

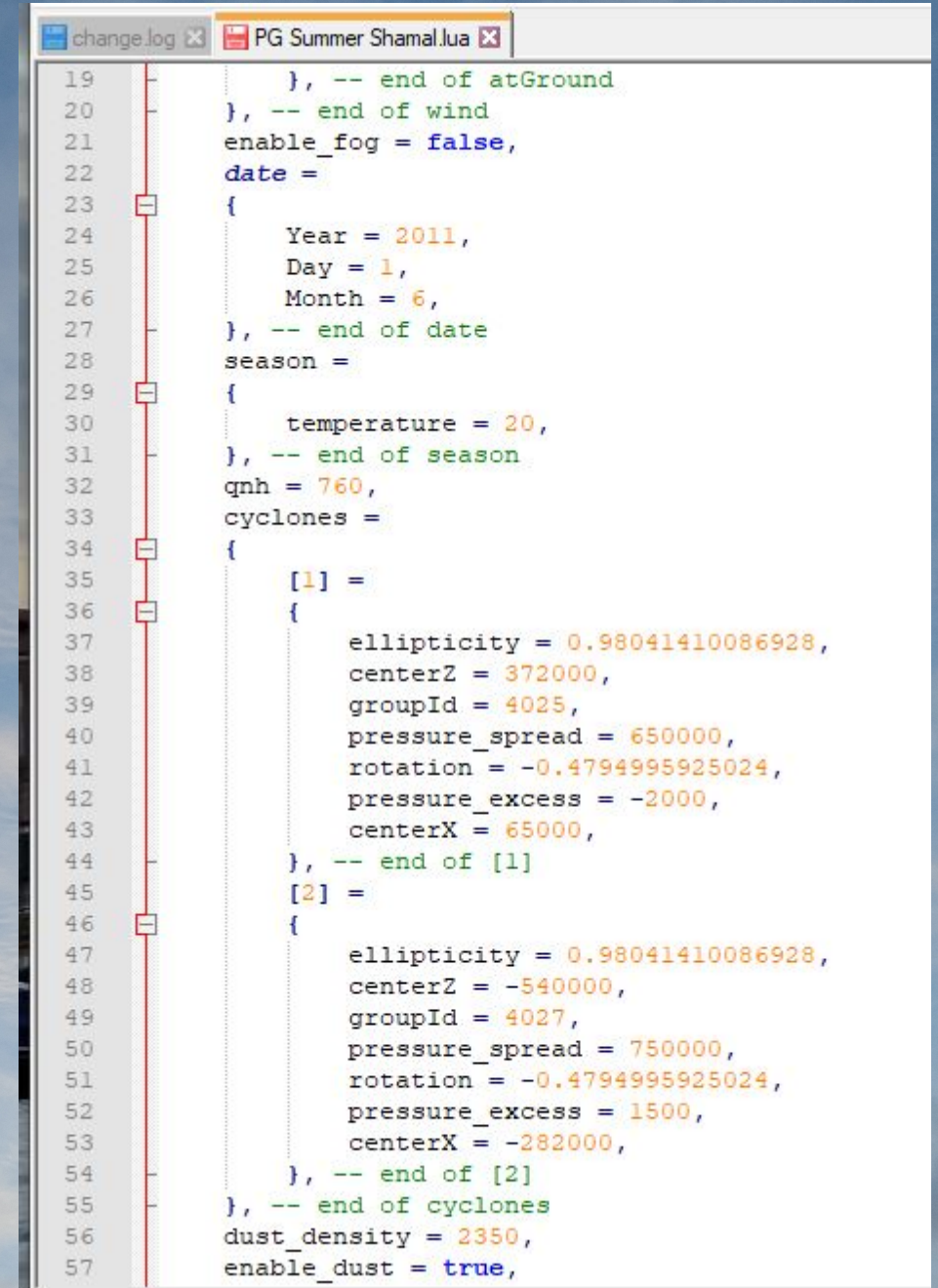
Once files are created and saved edit them in Notepad++, or any other LUA editing tool of your choice.

Once the files opens you should see a series of indented lines as indicated, the **orange** numbers are the only ones you can change

```
temperature = xx (in Celsius)
}, -- end of season
qnh = xxx
```

The system parameters begin after the line Cyclones as shown below

```
cyclones =
{
  [1] =
  {
    ellipticity = 0.58203634771562,
    centerZ = 288873.80151609,
    groupId = 2153,
    pressure_spread = 886989.78807156,
    rotation = -0.64882076496654,
    pressure_excess = -1381,
    centerX = -120146.27202545,
  }, -- end of [1]
}, -- end of cyclones
```



```
19      }, -- end of atGround
20    }, -- end of wind
21    enable_fog = false,
22    date =
23    {
24      Year = 2011,
25      Day = 1,
26      Month = 6,
27    }, -- end of date
28    season =
29    {
30      temperature = 20,
31    }, -- end of season
32    qnh = 760,
33    cyclones =
34    {
35      [1] =
36      {
37        ellipticity = 0.98041410086928,
38        centerZ = 372000,
39        groupId = 4025,
40        pressure_spread = 650000,
41        rotation = -0.4794995925024,
42        pressure_excess = -2000,
43        centerX = 65000,
44      }, -- end of [1]
45      [2] =
46      {
47        ellipticity = 0.98041410086928,
48        centerZ = -540000,
49        groupId = 4027,
50        pressure_spread = 750000,
51        rotation = -0.4794995925024,
52        pressure_excess = 1500,
53        centerX = -282000,
54      }, -- end of [2]
55    }, -- end of cyclones
56    dust_density = 2350,
57    enable_dust = true,
```


The following deal with Dust, Fog, Visibility, Date and Time

```
dust_density = 2350,
enable_dust = true,
clouds =
{
    thickness = 200,
    density = 0,
    base = 300,
    iprecptns = 0,
}, -- end of clouds
atmosphere_type = 1,
groundTurbulence = 0,
type_weather = 0,
name = "PG Summer Shamal",
fog =
{
    density = 0,
    visibility = 0,
    thickness = 0,
}, -- end of fog
start_time = 28800,
visibility =
{
    distance = 80000,
}, -- end of visibility
} -- end of vdata

datetime =
{
    date =
    {
        Year = 2011,
        Day = 1,
        Month = 6,
    }, -- end of date
    start_time = 28800,
} -- end of datetime
```

```
55 }, -- end of cyclones
56 dust_density = 2350,
57 enable_dust = true,
58 clouds =
59 {
60     thickness = 200,
61     density = 0,
62     base = 300,
63     iprecptns = 0,
64 }, -- end of clouds
65 atmosphere_type = 1,
66 groundTurbulence = 0,
67 type_weather = 0,
68 name = "PG Summer Shamal",
69 fog =
70 {
71     density = 0,
72     visibility = 0,
73     thickness = 0,
74 }, -- end of fog
75 start_time = 28800,
76 visibility =
77 {
78     distance = 80000,
79 }, -- end of visibility
80 } -- end of vdata
81 datetime =
82 {
83     date =
84     {
85         Year = 2011,
86         Day = 1,
87         Month = 6,
88     }, -- end of date
89     start_time = 28800,
90 } -- end of datetime
91
```


Save the file and go back to DCS

Select Static Weather, then Dynamic

Reload the newly created weather file with the folder icon.

At this point you can go into the mission and see if it suits your needs or likes. You may need to repeat these steps a few time to get the desired effect.

