

|ZUTI| Moving Dogfight Server

(MDS)

Mod for IL2 Sturmovik v4.08/4.09



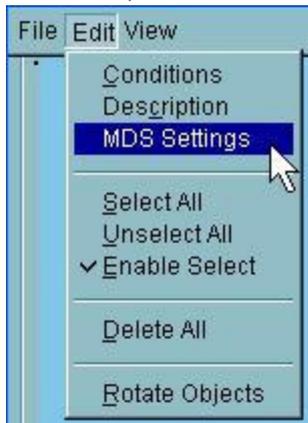
Table of content

1.	MDS through FMB.....	3
1.1.	Radar	3
1.2.	Icons	5
1.3.	Rearm/Refuel/Repair	6
1.4.	Carriers.....	8
1.5.	Next Mission	8
1.6.	RespawnTime	9
1.7.	HUD	9
1.8.	Craters	10
1.9.	AirDrops	10
1.10.	Misc.....	11
2.	Home bases.....	12
2.1.	Properties	12
2.2.	Aircraft.....	13
2.3.	AirSpawn/Base Radar(s).....	13
2.4.	Capturing.....	14
2.5.	R/R/R	14
3.	Other features/notes	15
3.1.	Static Unit's Conversion	15
3.2.	Artillery and Tanks as Front Marker Carriers.....	15
3.3.	Controlling MDS	15
3.4.	Moving Targets	15
3.5.	Moving Front Lines	16
3.6.	Home Base Capturing.....	16
3.7.	Recon Target Icon	16
3.8.	Tower Communication	16
3.9.	Version Checking	16
3.10.	Arming screen	16
3.11.	Carrier Spawn Points	17
3.11.1.	Spawn points for USA generic, Lexington and Saratoga:	17
3.11.2.	Spawn points for Essex and Intrepid carriers:	17
3.11.3.	Spawn points for escort carriers:	18
3.11.4.	Spawn points for big escort carriers from ship pack 2:.....	18
3.11.5.	Spawn points for Illustrious and Graph Zeppelin carriers:	19
3.11.6.	Spawn points for IJN Akagi carrier:	19
3.11.7.	Spawn points for remaining IJN carriers:	20

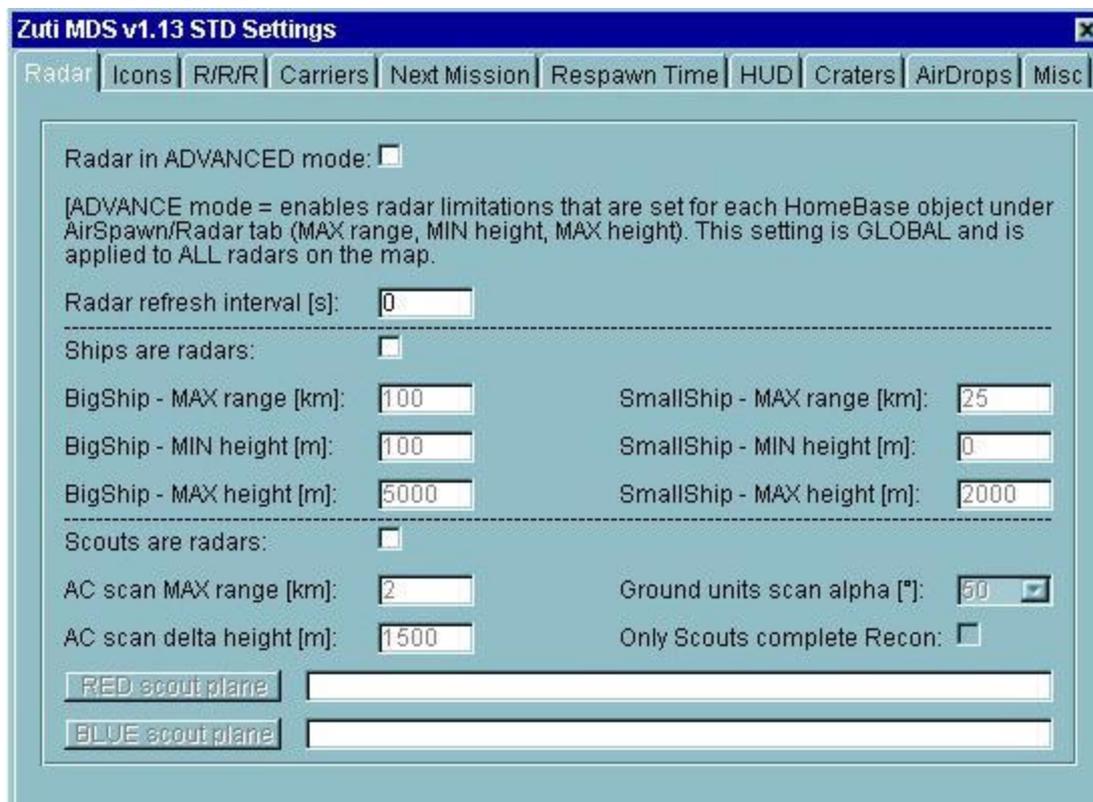
1. MDS through FMB

Where?

Start FMB, then Edit and select MDS



1.1. Radar



This screen contains settings related to radar objects. These objects are:

- Objects with string **Radar** in their name (objects under Objects in FMB, caps are important). Object 76 is one of them (in modded game, it can be also under number 82 or different),
- ships can also be radars (see below for more details) and
- custom planes can also act as radars, if *Scouts are radars* option is selected.

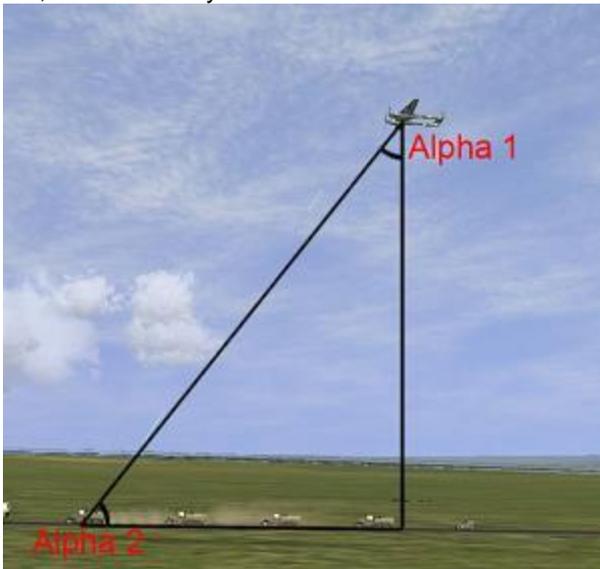
Descriptions of available options on Radar screen in FMB:

- *Radar in ADVANCED mode*: if this option is enabled, ALL radars on the map will show only those planes that are inside radars assigned range. Range parameters are set for each home base object under home base *AirSpawn/Base Radar(s)* tab,
- *Radar refresh interval [s]*: this tells the game how fast radars refresh positions of detected objects,
- *Ships are radars*: makes ship objects radars. You have two sets of parameters, one for ships that hold powerful, long range radars and for ships that hold less powerful, short range radars. If you want only big ships to act as radars, set **ALL** small ship settings to **0**. Or vice versa.

- *Scouts are radars*: this will enable map makers to use scout airplanes as radar objects. Only scouts are able to identify GOs (Ground Objects) and that option is only available if you enable scouts on your mission. First set of parameters determines the range in which scouts can identify other aircrafts. *Ground units scan alpha* [°] parameter determines the range for which scouts can identify GO objects. The formula behind this is: **$range = scout\ height * \tan(\alpha)$** . So, **the higher the scouts are, the more area they cover.**

*Detailed explanation for **Ground units scan alpha** parameter*

In the picture below, pay attention to **ALPHA 1** corner. This is the corner that alpha parameter describes. The ground line represents the land the scout then covers. That's why the higher scouts are, the more they see.



WARNING: the more scout planes you assign, the slower your game MIGHT run!!!

Ships with powerful, long range radar:
All CVs (aircraft carriers), all battleships and all cruisers.

Ships with less powerful, short range radar:
All destroyers.

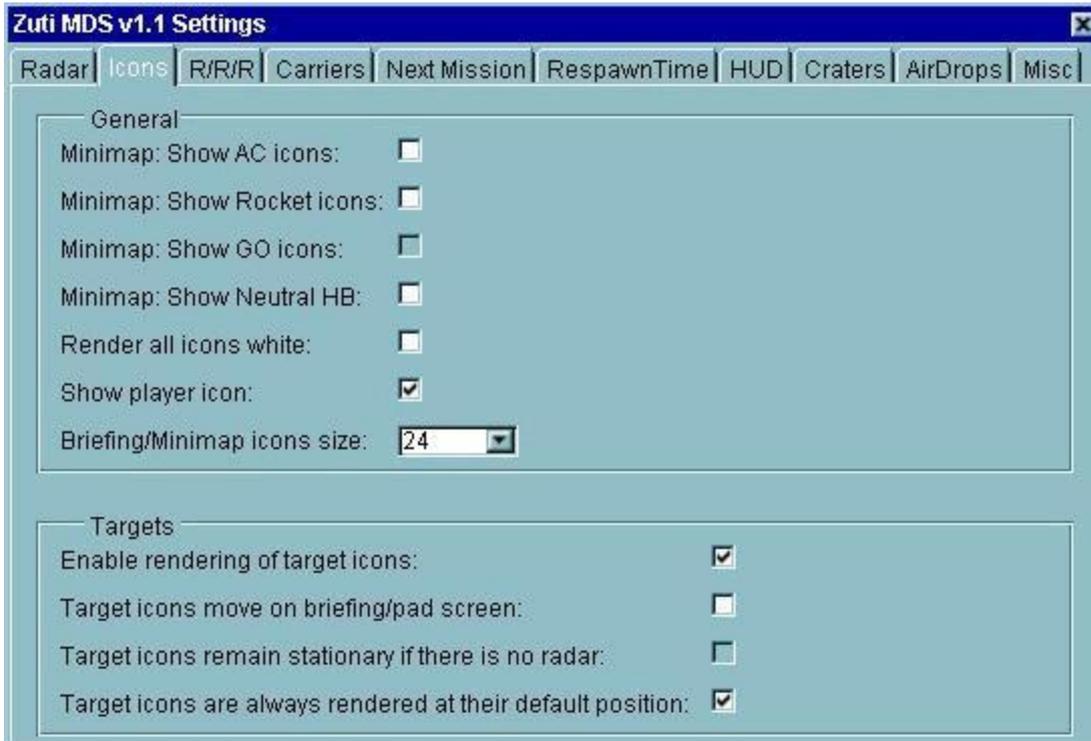
Important

MDS radar functions are **only available if you have NoMapIcons difficulty enabled in your difficulty screen.** If not, the game behaves as it does without MDS and all radar objects are ignored.

Exceptions

Targets of stationary nature (*destroy/defence ground, destroy/defence bridge, inspect*) are *always* drawn on your map, regardless of your radar settings. If you don't want them to be seen, disable *Enable rendering of target icons* option under *Icons* tab.

1.2. Icons



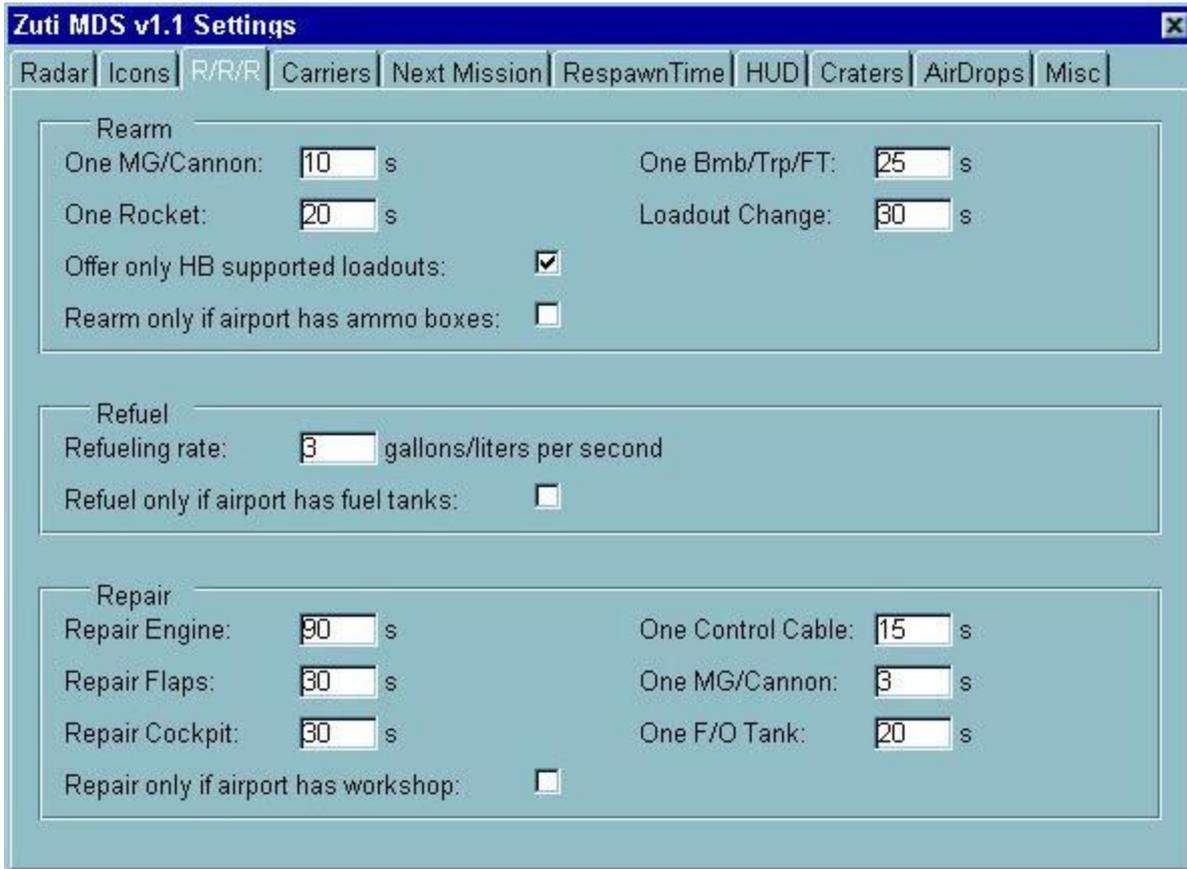
Icons section is separated in two sections, one covering general settings and the second specifying *Target icons* and their behavior. General settings are:

- *Mini-map: Show AC icons:* displays aircraft icons on mini-map,
- *Mini-map: Show Rocket icons:* displays rockets on mini-map (V1 rocket...),
- *Mini-map: Show GO icons:* displays AAA, Tank or Ship icons on mini-map,
- *Mini-map: Show Neutral HB:* displays neutral/white home base icons on mini-map,
- *Render all icons white:* this option will make all icons on pad white (all but target icons),
- *Show player icon:* enables/disables rendering of players plane on mini-map,
- *Briefing/Mini-map icons size:* determines size of all icons that are on the mini-map.

Targets specific settings:

- *Enable rendering of target icons:* enables/disables target icons on the briefing/map screen,
- *Can target icons move on briefing/pad screen:* If your side has radars and target object is inside radar range, icon for that target will change position,
- *Target icons remain stationary if there is no radar:* this makes mini-map/briefing target icons stay at their last known location once it gets outside of radar range (or if radars were destroyed). **Caution:** if you join the game after the mission has already started and your side already lost radars, you will see target icons at their default position if this option is enabled,
- *Target icons are always rendered at their default position:* if enabled, option *Can target icons move on briefing/pad screen* is disabled and icons are static.

1.3. Rearm/Refuel/Repair



Here you have settings for Rearm/Refuel/Repair (or R/R/R) functions. They are separated in three sections, each covering specific task:

- rearm,
- refuel and/or
- repair.

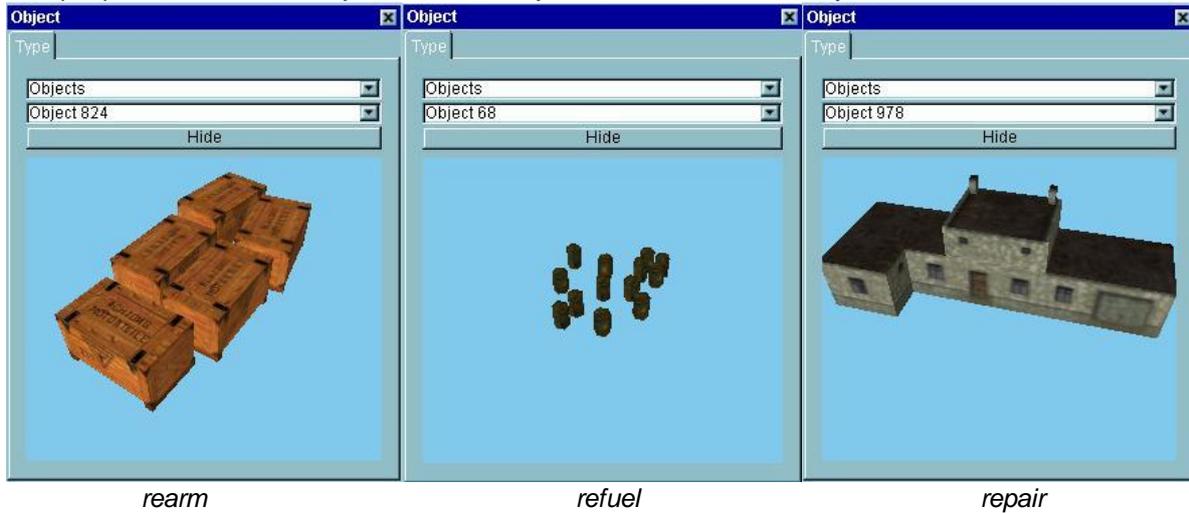
Each of those sections has an option that enables it's function only if specific objects are present on the airfield that player landed/spawned. Additionally, *Rearm* option has **Offer only HB supported load-outs** option. With this option enabled, player that lands on such airfield can only select those load outs for his plane that this airfield supports. It can happen that this same airfield does not support player aircraft type. In that case, all he can do it execute rearm option that will restore his original weapons load-out.

If you allow R/R/R functions only if dedicated objects are present, you are also dealing with time penalties. The closer you park to those objects, the faster selected R/R/R operation is completed. Exceptions are carriers with fixed penalty 1.1 and test runways with 1.5.

Distance to R/R/R object	Time penalty multiplier
up to 200m	R/R/R function * 1.0
up to 400m	R/R/R function * 1.2
up to 600m	R/R/R function * 1.4
up to 800m	R/R/R function * 1.6
up to 1000m	R/R/R function * 1.8
greater than 1000m	R/R/R function * 2.0

So, if you park your plane 150m away from closest ammo box and you set that rearming of one MG/cannon is performed in 20s then your cannon will be rearmed in 20s. But, if you parked 800m away from ammo box, your operation will take $20s * 1.6 = 32s$. Just so you have the clear picture of how this works. You can see how your R/R/R time was calculated if you press **shift + tab**. You'll see console window and it will contain all the date behind the calculations.

Sample pictures of R/R/R objects in FMB-Objects menu. Numbers may differ!



Rearm, refuel and repair objects in IL2

Rearming objects must contain this string in their name: "Box".

Refueling objects must contain this string in their name: "Barrel" or "Tank".

Repairing objects must contain this string in their name: "Workshop".

Make note of the CAPS, they are important! Sample: ammoBox -> OK, ammobox -> not OK.

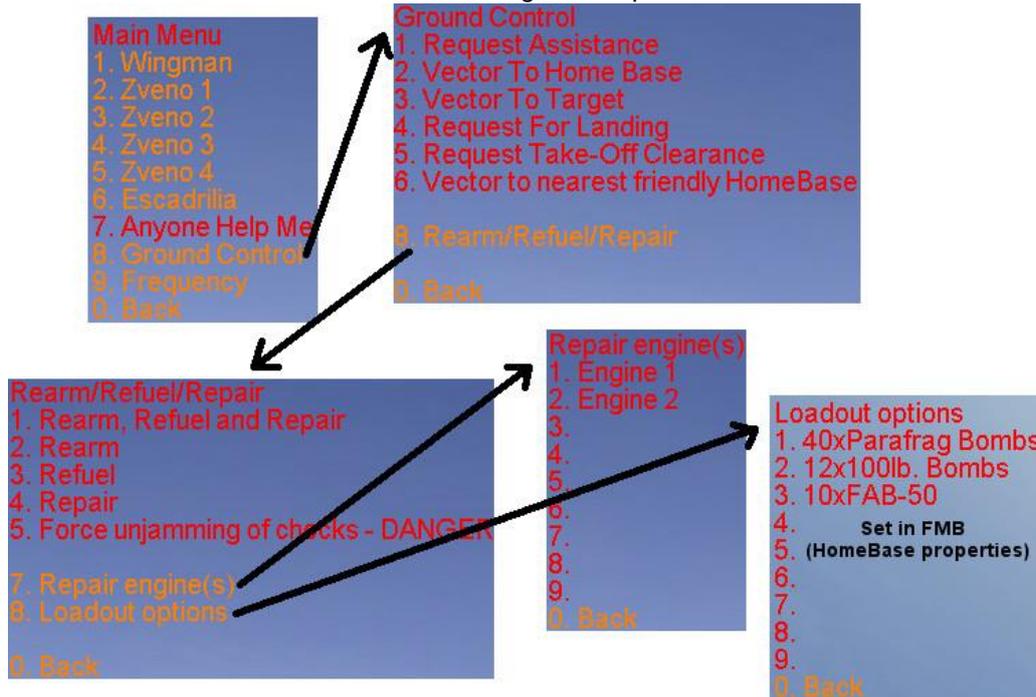
For R/R/R to work, you must be parked on predefined friction area and have your chocks in (except for float planes, for them you just have to be still and on friction area).

You can set friction areas in two ways:

- via mission/map specific entries by using friction tool that I have done for you or
- via Home Base properties window.

For more details on how to set up friction areas, please see file **ZUTI Friction.pdf**. Everything that you need to know about that topic can be found there. You can find that document under your MDS folder in Tools subfolder.

Tower communication screens for accessing R/R/R: press: TAB and select Ground Control.



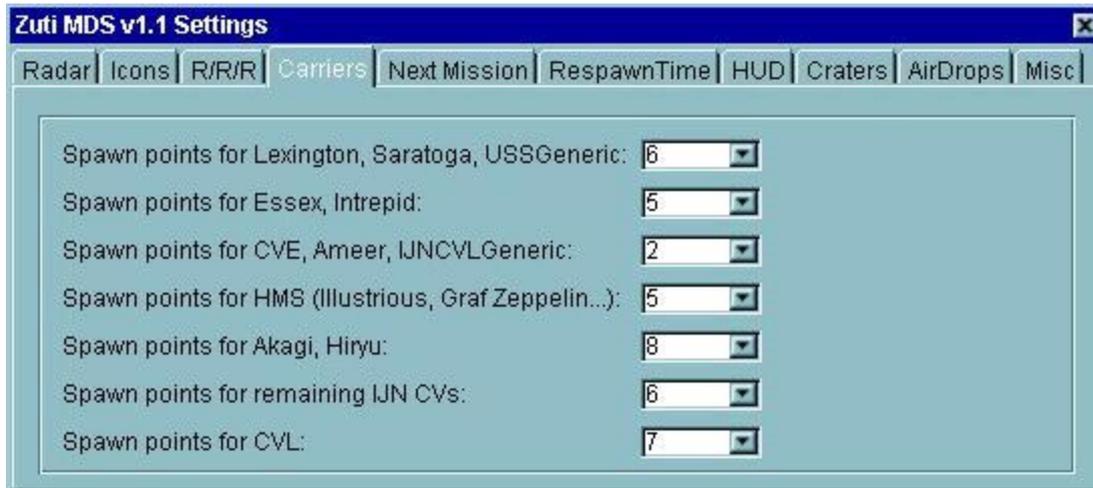
Important

If you select option 1 in R/R/R screen, refueling will be done **only to default fuel value** of your airplane (10%, 20%, 30% ... 100%) but if you select option **three** (Refuel), your plane will be refueled to its **max** capacity. Remember, you can always **stop** any R/R/R process if you disengage chocks. This combined with mentioned refuel method gives you total control of your plane fuel state.

Option 5 can be dangerous if you were firing your guns while chocks were set (and they naturally jammed) because recoil energy is saved. When you release chocks, you can find yourself backtracking across airfield.

Engine repairs can be done by selecting damaged engine. If you are already repairing one, you can still start repairing another (on multi-engine aircrafts).

1.4. Carriers

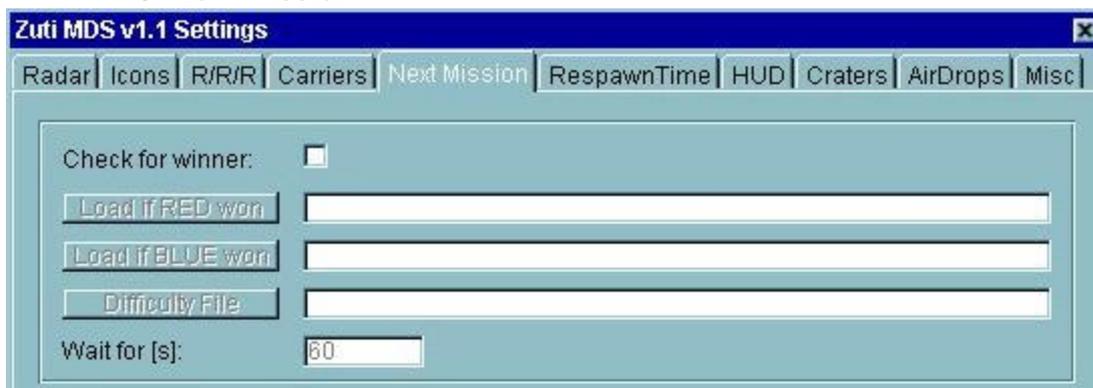


This window allows you to set number of spawn places (players that can join carrier based home base) for specific type of carrier. Drop-down menu has all valid values.

Supported carriers (full list):

Lexington, Saratoga, USS Generic, Casablanca, Kitkun Bay, Shamrock Bay, Essex, Intrepid, Illustrious, Akagi, Shokaku, Zuikaku, IJN Generic, ship pack 2 (Graf Zeppelin, Ameer, BelleauWood, Princeton, SanJacinto), Chaps CVs (Formidable, Indomitable, Hiryu, Kaga, Soryu, IJNCVLGeneric).

1.5. Next Mission



This screen allows you to set which mission will load if red or blue side wins. If you press buttons next to text boxes, file selection window will appear. Browse to your desired mission files and confirm your selection. Pay **special attention** to mission location if you will be moving missions to different servers as file location path **must not change**. If it does, new mission will not load.

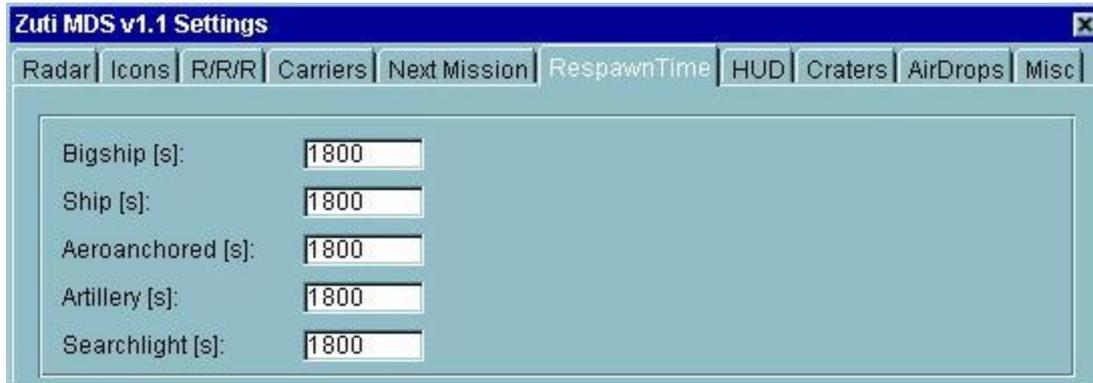
- *Check for winner*: if this is enabled, *Next Mission* parameters are taken into account when one side wins,
- *Load if RED won*: mission that will be loaded if red team wins,
- *Load if BLUE won*: mission that will be loaded if blue team wins,
- *Difficulty File*: difficulty file that will be applied to newly loaded mission,

- Wait for [s]: delay before new mission will be loaded once one team wins.

Mission files MUST NOT contain full path. They must be starting with *Missions* string (all missions must be places inside IL2 root\Missions folder). But for difficulty, FULL, ABSOLUTE path must be provided (c:\...\medium.difficulty, for instance). So, edit them accordingly. And remember, these paths have to be as they are on SERVER side, not client. Server is the one that is loading missions.

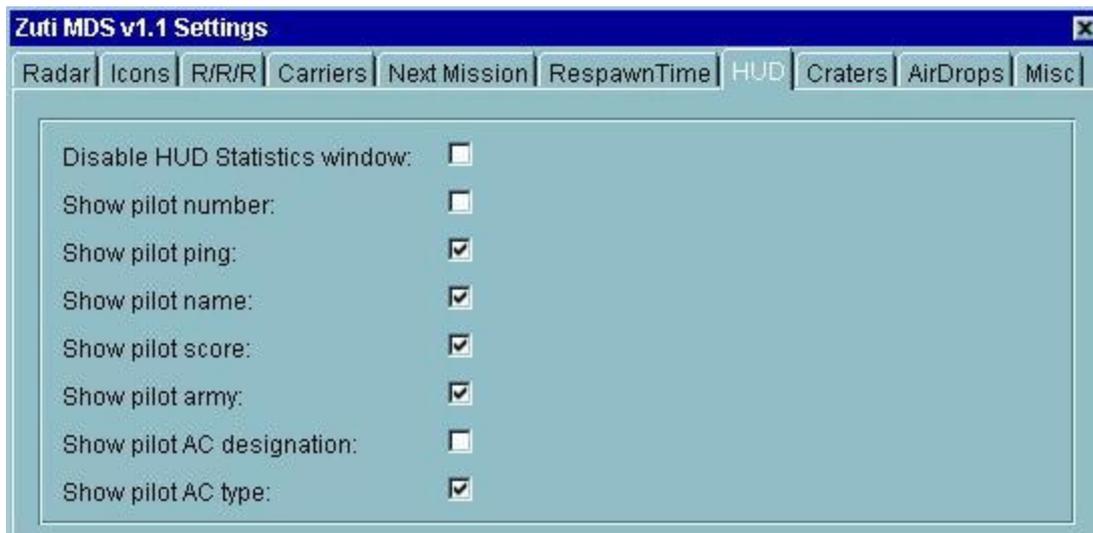
This feat is supported if you use ZUTI_MDS_Manager. It is not (yet) supported with FBDj v1.5 and it will not be supported with IL2SC.

1.6. RespawnTime



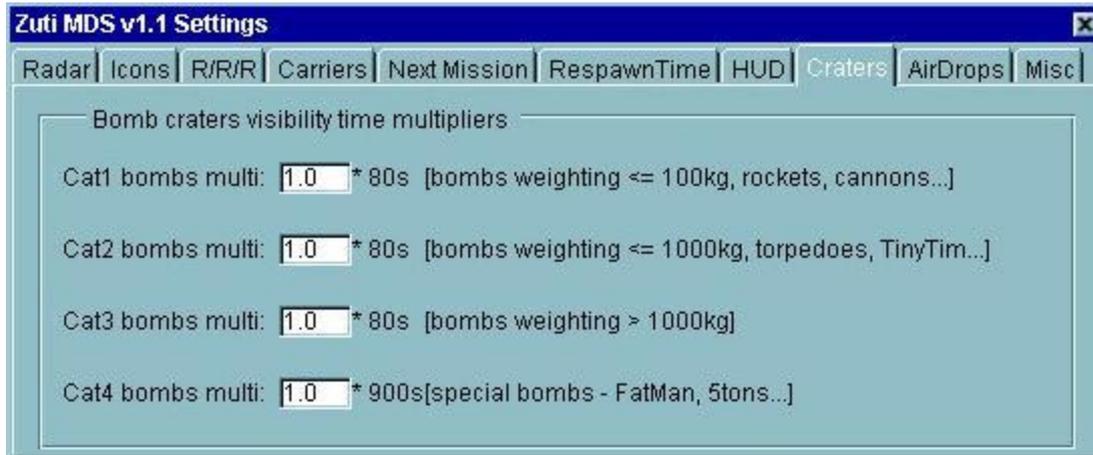
This screen enables you to control how soon static objects will be reborn.

1.7. HUD



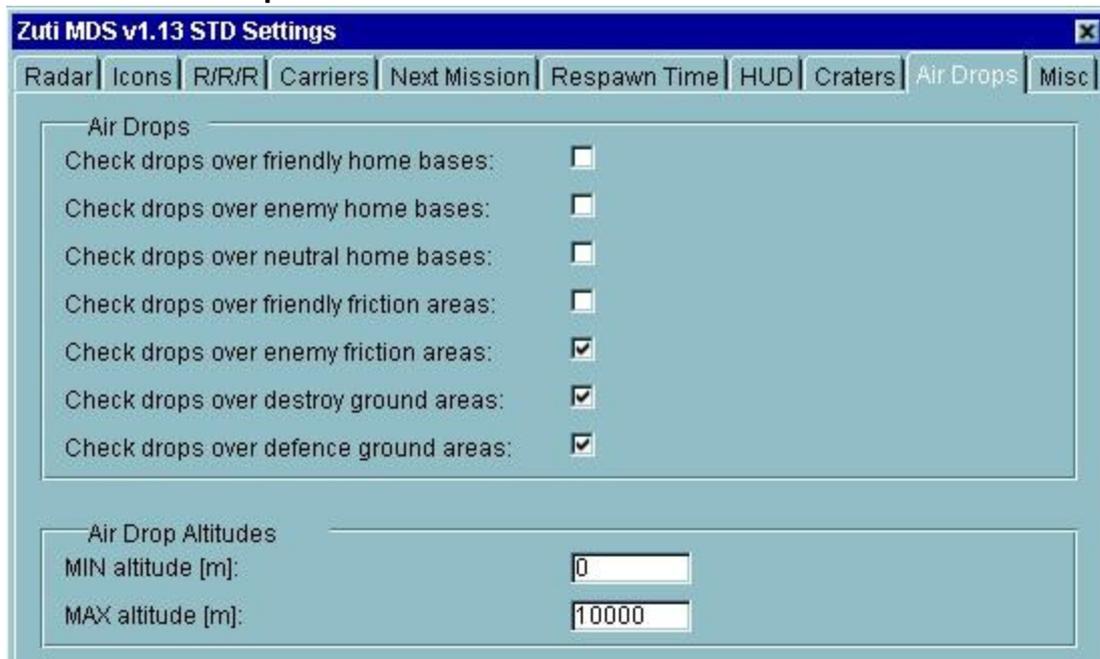
This window allows you to select which options will be displayed when player presses "S" button to view who is connected to server. You can also disable this statistics.

1.8. Craters



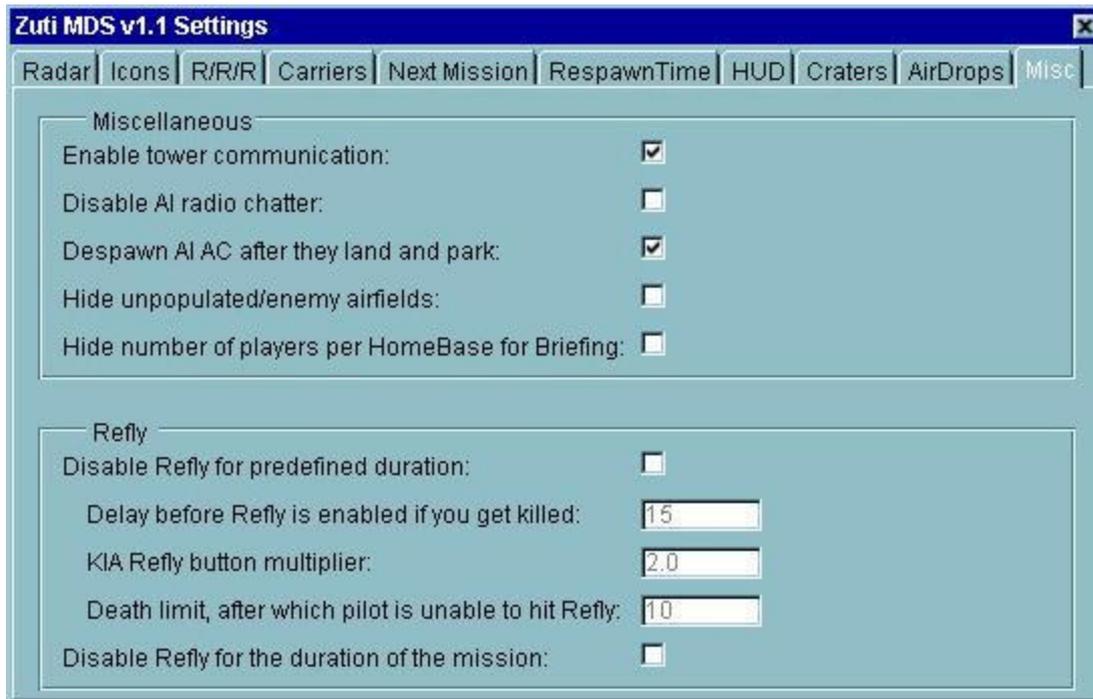
On this screen you can modify time before bomb/gun/rockets craters disappear. Default multiplier is set to 1.0 for all of them. Default times are also stated (number next to text boxes). By changing multipliers, you are making craters stay longer or disappear quicker. For category 4 bombs, Fat Man has 900s as default time, other have 600s.

1.9. AirDrops



All cargo drops and paratrooper drops are rewarded with points. On this screen you can determine over which areas will these drops be recorded and rewarded. All other cases go unnoticed. Another thing that must be specified is drop altitudes. You can set min and max altitudes. This prevents pilots from executing drops too low, but upper limit can't hurt either.

1.10. Misc



Misc screen is also separated in sections, two to be exact.

Miscellaneous:

- *Enable tower communication*: enables TAB key for live players,
- *Disable AI radio chatter*: disable messages sent from AI planes,
- *De-spawn AI AC after they land and park*: when AI aircraft land and park, they will vanish from the map and release game resources. They will also not interfere with live players,
- *Hide unpopulated/enemy airfields*: non-friendly and unused airfields are not drawn on mini-map. Special useful on big maps with a lot of airports and
- *Hide number of players per home base from Briefing*: this option, if enabled, will hide number of players that is displayed beside each home base object on your map on briefing screen.

Refly:

- *Disable Refly for predefined duration*: this option enables mission maker to disable refly button for predefined duration that also depends on number of KIA for player. If this option is selected, mission makers can specify what the refly button penalty is (seconds). Calculation behind this is as follows:

refly penalty = Delay before Refly is enabled + (KIA count * KIA Refly button multiplier).

Example: pilot died 4 times. With above settings, his time penalty would be:

refly penalty = 15 + (4 * 2.0) -> refly penalty = 23s.

- *Disable Refly for the duration of the mission*: with this option you disable refly button until mission is reloaded.

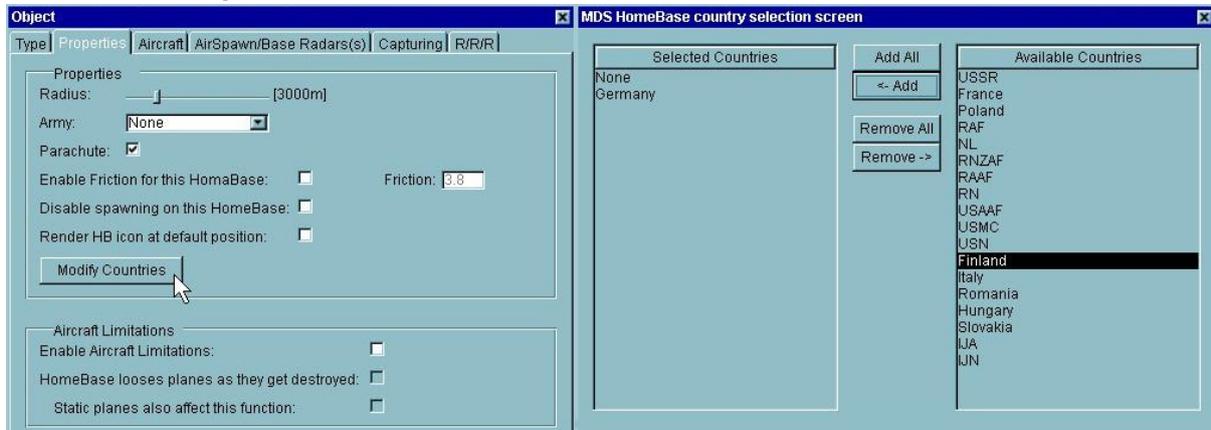
For pilots with damaged airplanes: if you land your plane on valid airport surface (friction mod) and your plane is damaged, you can bail out and change it without losing any points. On the other hand, if you bail from a perfectly fine airplane, you will be penalized for bail out.

With version v1.1 of MDS, player “bans” are also stored on server side, so if the player wants to cheat and disconnects from the server, then tries to connect, will be unable to fly as long as his “ban” is in action. After it will be cleared, he will be able to fly again.

2. Home bases

This section will cover new features for home base object that you place on your map in FMB.

2.1. Properties



Although above picture is small, you can see different options that are presented to you. Properties tab was separated in two sections.

Properties:

The default options from original IL2 were updated a bit and *Radius* will now show you actual r.

- *Enable Friction for this home base*: as we were already discussing the usage of R/R/R functionality and it being linked to predefined friction areas, this option enables selected home base to cover its covered area with *Friction* value. Default is 3.8.
- *Disable spawning on this home base*: this option can come handy if you want to set a number of pit-stop bases on your map on which pilots can land, do R/R/R and continue their mission.
- *Render HB icon at default position*: this option allows you to “hide” position of those home bases that are placed on the carriers. If you don’t want players to see where some home base is (surprise attacks), enable this option.
- *Modify Countries*: pressing this button will open a new window, the one that you see on the right side. There, you can specify which country marking connecting pilot will be able to select. No more will you have allied pilots wearing axis marks and make a fool of you that way. Again, only if mission maker decides to. This selection is transferred to *Arming* screen.

Aircraft Limitations

- *Enable Aircraft Limitations*: enabling this option will enable *Modify* button in *Aircraft* tab of home base object. There the rest is done.
- *Home base loses planes as they get destroyed*: when enabling this option, you instruct the game that a value that is set when modifying different planes in *Aircraft* tab is the available planes. When a plane gets destroyed, home base loses one plane and that plane counter gets reduced. So, if you are reckless, you can quickly be without popular plane types. But if this option is not selected, plane counter acts as max number of specific planes in use at the same time.
- *Static planes also affect this function*: this is additional parameter that you can set and with it enabled, plane limitations are also affected by static planes positioned inside selected home base circle.

For instance: you set your lovely La-7 plane number to 10.

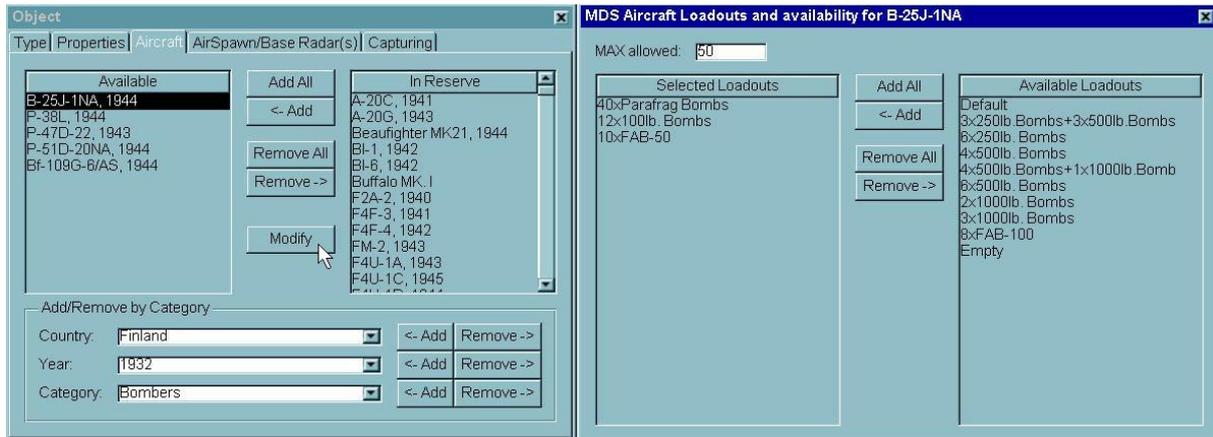
1) *Home base loses planes as they get destroyed option is enabled*

When any pilot of this home base selects La-7 and destroys it, this plane number will decrease. So, if you wreck this plane 6 times, your base will only have 4 La-7 left. Once you destroy those 4, you will be unable to fly La-7 from this base and will have to select new plane.

2) *Home base loses planes as they get destroyed option is disabled*

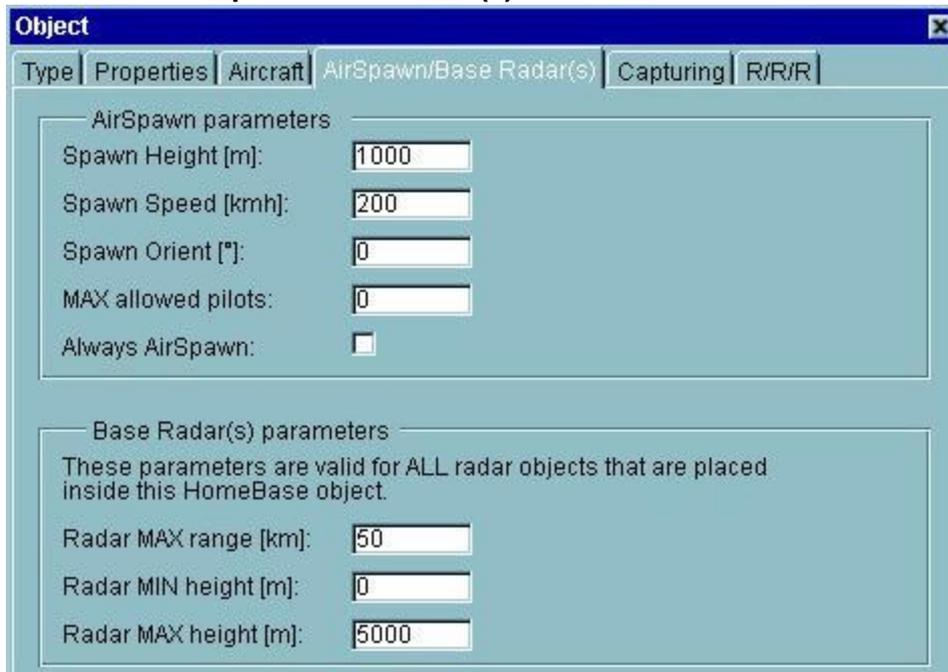
In this case, if 6 pilots for this home base select La-7, you will still have 4 free planes. If another 4 join and select it, no La-7 planes are available, so next player that joins the game will have to select a different plane. But as soon as one of the players that is using La-7 leaves the game, crashes the plane or takes different one, one La-7 is released and is available for new player.

2.2. Aircraft



This screen is typical IL2 screen with addition of *Modify* button. And this is where the fun begins. By selecting a plane in left list and pressing this button, window on the right will open for you. Here you specify plane specific settings. These are: number of planes and load-outs. Load-outs entered here are then seen in *Arming* screen when you join an online game and try to change your plane setup. You can see a result of these settings also in R/R/R screen examples sooner in this document.

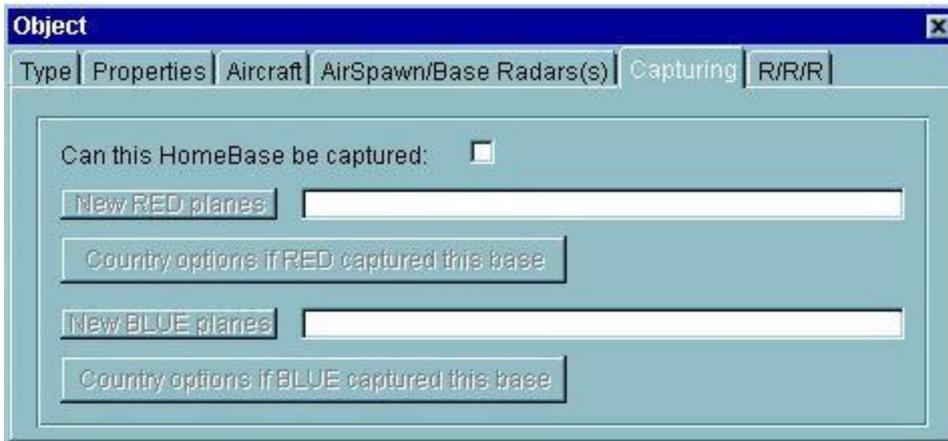
2.3. AirSpawn/Base Radar(s)



Mission makers have the possibility to set specific height, speed, orientation, max players and AirSpawning for each home base object placed on the map. This screen also allows user to set range parameters for all radar objects that are placed inside selected home base object.

Note: if *MAX allowed pilots* is set to *0* the number of allowed pilots is *limited by actual home base spawn points!*

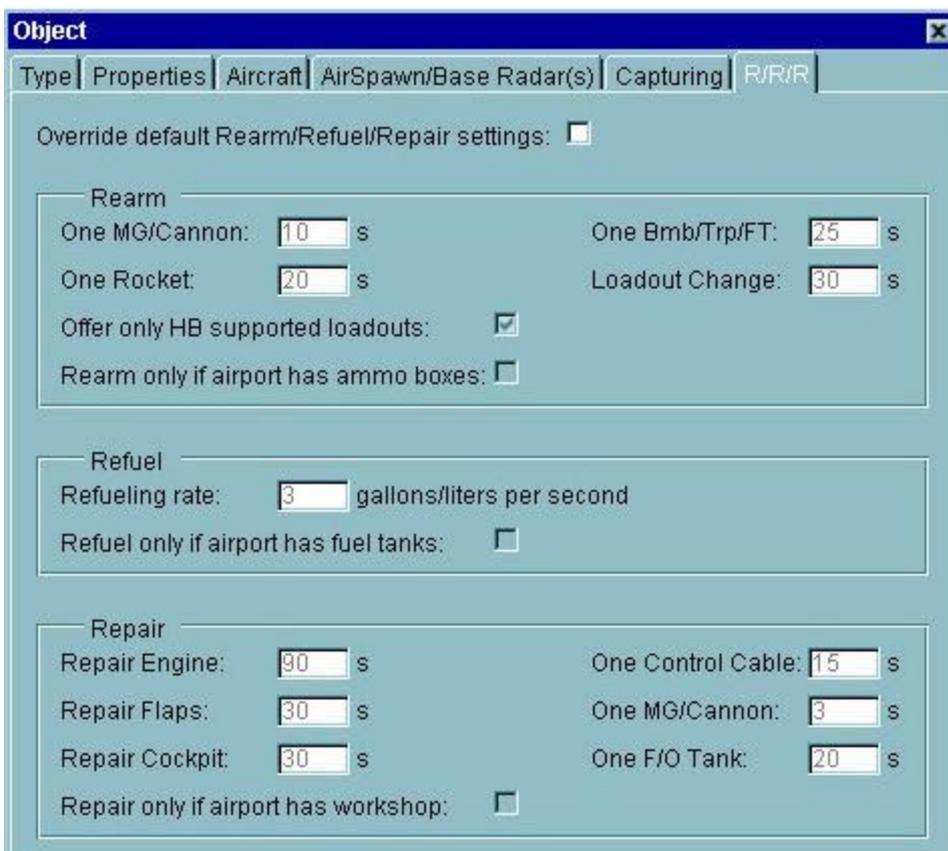
2.4. Capturing



This screen gives you option to enable or disable capturing of selected home base and populate it with specified planes. Options are:

- *Can this home base be captured:* applies only to selected home base,
- *New RED planes:* if you click this button you will see new window where you can select planes that will be loaded to newly captured home base, captured by allied army,
- *Country options if RED capture this base:* specify which countries are loaded in case RED capture this base,
- *New BLUE planes:* same as for RED but it happens when BLUE capture RED home base.
- *Country options if BLUE capture this base:* specify which countries are loaded in case BLUE capture this base.

2.5. R/R/R



R/R/R options in home base properties screen let's you override default R/R/R settings that are otherwise valid for **all friction areas**. If this option is enabled, entered values are true only for selected home base. You enable this by checking *Override default Rearm/Refuel/Repair settings* box.

3. Other features/notes

3.1. Static Unit's Conversion

With original IL2, all units inside home base circle are converted to army of that home base. This produced issues with moving objects that were set to do an attack to home base. As they were converted... they were not attacking. MDS alters this behavior in such ways that all static units that are inside home base circle are subjected to conversion but all moving units are ignored.

3.2. Artillery and Tanks as Front Marker Carriers

Tanks are self explanatory. You have dedicated *Tank* section in FMB objects list and all of those tanks can carry front marker. With artillery, things are different. **MDS DOES NOT** support objects listed under *Artillery* category as those are static objects. You have to select appropriate object under *Vehicles* category. Such vehicles are: *ZIS-5 AA*, *GAZ 4x7.62mm AA*, *M16*, *Opel Blitz Maultiler AA*... Once one of these marker carriers is destroyed, MDS will first search for same type objects. If none can be found, it will search for other type. If none of those can also be found, marker is removed. So, if tank is carrying front marker and gets destroyed, MDS will first search for new free tank objects. If none of those are available, it will search for free artillery objects and if that search produces no results, marker gets removed.

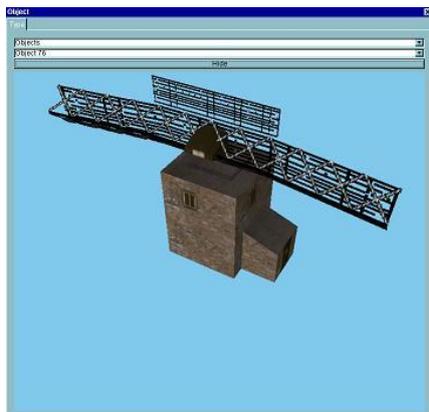
3.3. Controlling MDS

DS can work with server commanders (FBDj, MDS Monitor).

Main reason that I have created *IL2 MDS Monitor* is so that it can load new missions based on the outcome of current playing mission. This works based on mission objectives/targets. When one side completes given tasks, server checks for appropriate parameters and executes them if they are present. We are talking about fields available under *MDS Next Mission* tab.

3.4. Moving Targets

Target descriptions change depending on player army. So for one it will read defend and for another it will read destroy. Targets can also move on the map. In order for icons to really move around,



each side has to have at least one LIVE radar object inside one (or more) of its home bases. As soon as radar is gone (either destroyed or home base was captured by opposing army) target icons go to their default position and stop moving. Radar object that I'm talking about is under *Objects* list in FMB (object 76). It can be any other object, as long as its name has **Radar** string in its name (**watch for caps, they matter!**).

More about settings for MDS radar or "Fog of War" functionality can be found in *Radar* and *Icons* tabs of MDS menu in FMB.

3.5. Moving Front Lines

Moving front lines can be set up by placing front mark object in FMB on top of tank, artillery or ship that is of type BigShip. BigShip ships are all carriers (CV), battleships, costal defense ships, cruisers and all IJN destroyers (strange). But do make sure you place FrontMark object ON TOP of mentioned objects center point. If not, the front will not move. If object is destroyed, the code will search for nearest friendly unit, capable of carrying flag (if tank/artillery is destroyed, tanks/artillery are searched, if BigShip then ships are searched). If no units that would meet required criteria are found, front marker is removed and front lines move accordingly.

Note: moving front lines apply for **non-static** units i.e. for units that move!

3.6. Home Base Capturing

Once front line moves over home base that is owned by opposing army, it is converted to advancing army. All objects in that home base radius are converted to new army. Once home base is captured, new planes are loaded to its list. If you don't specify which planes to load default planes are loaded (for red side Hurricane MkIIb, for blue side Bf109-E4). You can see an example of this mission if you run *MDS_Capturing_RedBlue.mis* mission that comes with MDS as template mission.

Another possibility to capture home base is by moving your flag carrier inside home base circle. This, however, is only true for **non red/blue** home bases! Also, these home bases need to have front markers stationed inside its circle too because once you get your marker in it, home base markers are removed and front is refreshed. You can see an example of this mission if you run *MDS_Capturing_RedBlueGreen.mis* mission that comes with MDS as template mission.

This feature might seem complex, so I applaud to you once more, look sample missions that come with MDS and I assure you, you will get it in no time.

3.7. Recon Target Icon

Once player joins the game, he receives recon targets status update. The problem is that originally, recon targets were not refreshed because they do not require to be attached to any objects. MDS syncs this recon targets also and it also assigns 250 points to the first player that completes it. This could be useful for air races, for instance.

3.8. Tower Communication

MDS enables tower communications for live players on DF servers. Beside R/R/R options there is one other that perhaps needs special mentioning. That is **Request for Target vector**. It will show you vector to your **DESTROY** target objectives. It ignores DEFENCE targets for players.

3.9. Version Checking

If your MDS installation version is not the same as server MDS version you will not be able to connect to it. This also applies if server has no MDS installed and you do, or vice versa.

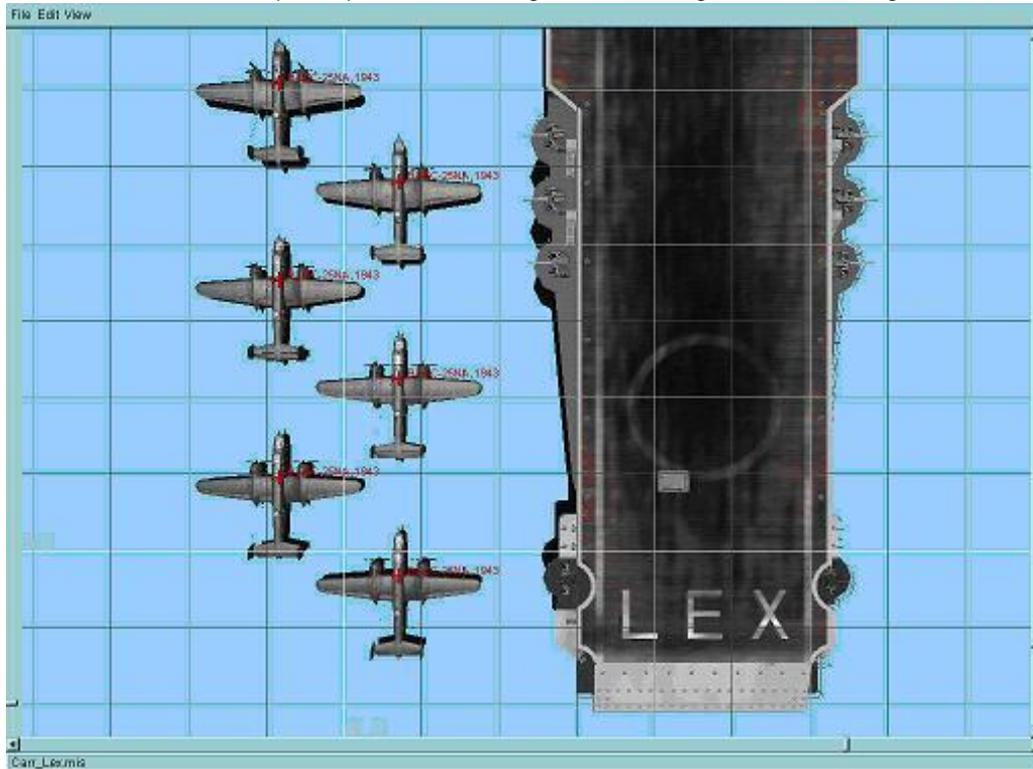
3.10. Arming screen

With addition of reflecting FMB plane limitations and country limitations for selected HomeBase, fuel selection list was refreshed and is now showing 10% incremental options. Before that it had 25% incremental options.

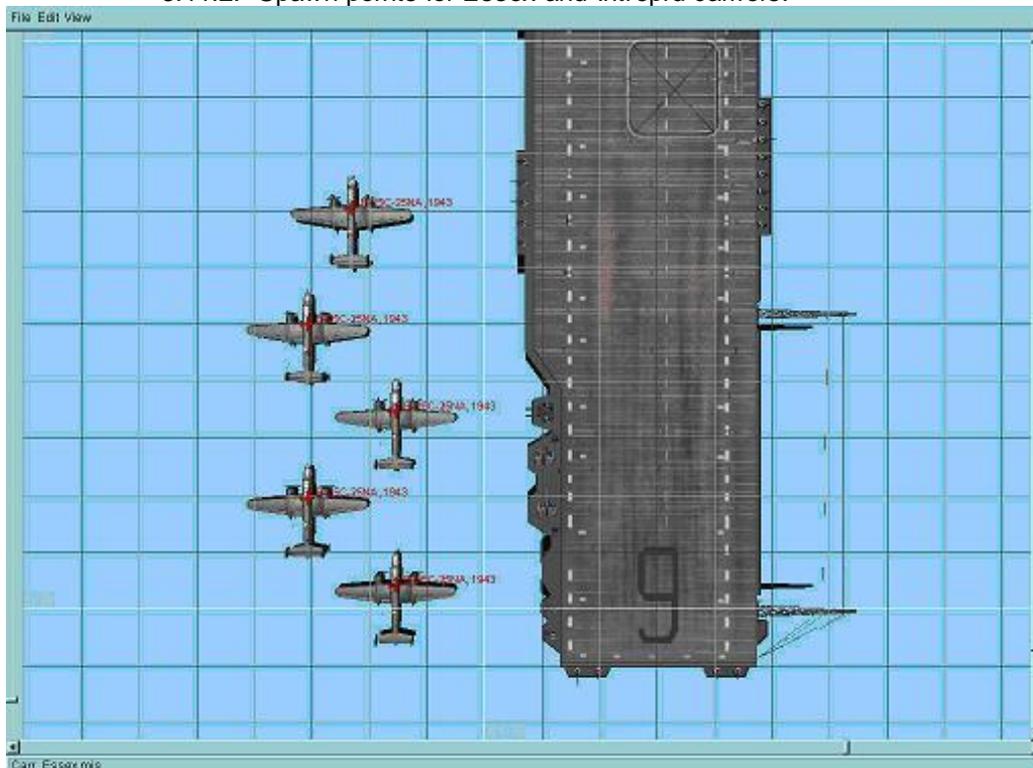
3.11. Carrier Spawn Points

The default number of spawn places and their placements for each aircraft carrier type can be seen in following pictures:

3.11.1. Spawn points for USA generic, Lexington and Saratoga:



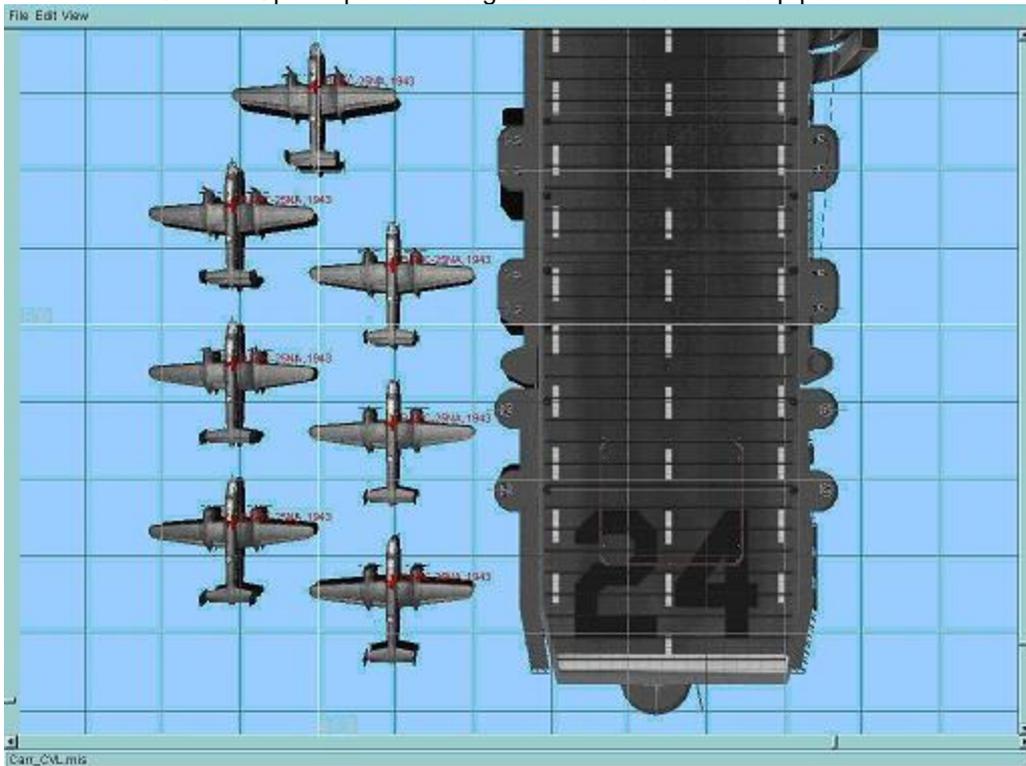
3.11.2. Spawn points for Essex and Intrepid carriers:



3.11.3. Spawn points for escort carriers:



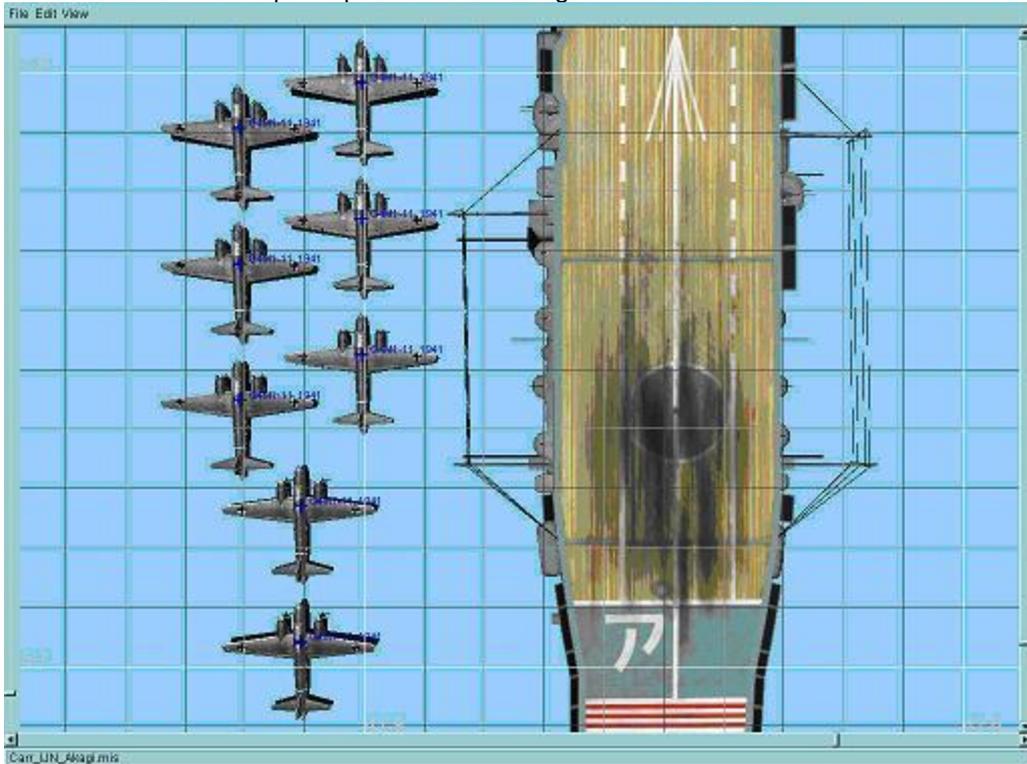
3.11.4. Spawn points for big escort carriers from ship pack 2:



3.11.5. Spawn points for Illustrious and Graph Zeppelin carriers:



3.11.6. Spawn points for IJN Akagi carrier:



3.11.7. Spawn points for remaining IJN carriers:

