## v2.4B45 by Mandoble March 2010

**First of all, you may not use Mando Missile ArmA (nor any of its parts) for commercial, training or military purposes nor include it into any other add-on or mod (not even partially) nor redistribute or mirror it without Mandoble's prior permission and agreement.**

NOTE: All the visual systems provided within Mando Missile (HUDs, MCCs, MMCs and TV cameras) are calibrated to appear correctly with the interface size set to "**normal**". You will find that option in **ArmA2 -> Options->Video Options -> Advanced -> Interface Size**.

# Zip contents, installation and Script Suite setup

Current beta of Mando Missiles comes in addon version only, inside the zip file you will find:

- Missions folder: this contains the demo missions, copy them to your missions folder for the editor.
- **@mma** folder: contains an addon folder wih **mando_missiles.pbo** and its signature, as well as Planck's **Mu90.pbo** (torpedo). You can just move this folder into your ArmA2 folder and then run ArmA2 with **mod=@mma** modifier.
- **@mma_xeh** folder contains Kju's **MMA_XEH_AutoLaunch.pbo** (extended_eventhandlers.pbo and mando_missiles.pbo are required by this to work). MMA_XEH_AutoLaunch presence self initiates MMA for these missions that are not using MMA already (run ArmA2 with **mod=@mma;@mma_xeh** modifiers).
- Keys folder: contains my public key.
- MMA_ReadmeFirst.pdf: this file.
- **Script Suite folder**: contains mma_script_suite.utes example mission using the script suite instead of the addon. This example mission contains **mando_missiles** folder, required for any mission using the script suite.

## Script Suite usage

MMA in script suite form allows you to integrate MMA within your mission, the final result is 100% addon free. Note that for missions using the script suite, the MMA Gamelogics should not be placed within the mission's map.

To use the script suite within a mission you must follow these steps:

1 - Copy **mando_missiles** folder within your mission's folder.

2 - Create a **description.ext** file within your mission's folder with no less than the following mandatory content:

```
// Description.ext file
// Needed for Mando Missile ArmA
#include "mando_missiles\mando_missile.h"
// End of Needed for Mando Missile ArmA


class RscTitles
{
// Needed for Mando Missile ArmA
#include "mando_missiles\mando_missiletitles.h"
// End of Needed for Mando Missile ArmA
};


class CfgSounds
{
  sounds[] = {};
// Needed for Mando Missile ArmA
#include "mando_missiles\mando_sounds.h"
// End of Needed for Mando Missile ArmA
};
```

3 - Create an **init.sqf** file within your mission's folder containing:

```
// init.sqf file
// Mando Missisle initialization
```

```
[false]execVM"mando_missiles\mando_missileinit.sqf";

// Wait for Mando Missile script suite initialization
waitUntil {!isNil "mando_missile_init_done"};
waitUntil {mando_missile_init_done};
```

4 - Add more MMA systems setup scripts to the init.sqf as needed. Note that you can also startup individual systems present inside any of these scripts.

```
// Default systems setup
[]execVM"mando_missiles\mando_setup_full.sqf";

// FFAA Mod systems setup
[]execVM"mando_missiles\mando_setup_ffaa.sqf";

// ACE2 systems setup
[]execVM"mando_missiles\mando_setup_ace.sqf";

// Mando gun sounds and tracer effects setup
[]execVM"mando_missiles\mando_gun\mando_guninit.sqf";
```

5 - Override MMA globals if needed. Note that all the following globals are already set to default values by **mando_missileinit.sqf**, just in case you can override anyone, add the corresponding line and desired values to the mission's **init.sqf**

```
// A new class to be used as MMA rearming point
mando_rearm_sources_classes = mando_rearm_sources_classes +
["Land_Barrel_empty"];

// Minimum altitude for Air units to be detected by radar
mando_minairalt = 10;

// Forbidden weapons and magazines
// Put there class names for weapon combinations that will not be allowed from rearming
dialog
mando_weapons_forbidden = ["ACE_B61BombLauncher"];

// BIS HUD (top radar) covered by red bars
mando_hide_bis_hud = true;

// 4 Arrays of colours to be used when toggling MMA HUD colours
mando_hud_colors_sets = [
[[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5]],
[[1,0.5,0],[1,0.5,0],[1,0.5,0],[1,0.5,0],[1,0.5,0],[1,0.5,0]],
[[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5],[0.5,1,0.5]],
[[0,0.7,0.5],[0,0.7,0.5],[0,0.7,0.5],[0,0.7,0.5],[0,0.7,0.5],[0,0.7,0.5]]
];

// Dont show a hint displaying MMA keys when a HUD is activated
mando_show_hint_global = false;

// If you find some weird effects when firing a missile against a locked on target,
// just in case there is an addon conflict set it to true
mando_fire_exclusive = true;
```

```
// Default images for RWRs for east and west units
mando_rwrimg_west = "my_desired_rwr_west.paa";
mando_rwrimg_east = "my_desired_rwr_east.paa";

// Overal difficulty for flares (> 0 easier, < 0 harder)
mando_minchaffdist = 0;
```

# Example missions included in the zip

Try these missions directly from the editor. In some of them you will see many vehicles, planes or choppers that you can use. These are set with 0% probability of presence, so the only one created is the one having the planer. In these cases just put the player in the plane, vehicle, soldier or chopper you want to use for the test, then you can exit the mission, put the player in another vehicle type and test again.

| Mission name | Description |
|---|---|
| mma_nuclear_mirv.utes | Basic example of nuclear missile deploying MIRV warheads. Missile and mirvs are Mando Missiles. |
| mma_stealth_test_addon.utes | Example of MCC system (activated via menu action) and target detection. F35B is marked as 'stealth' capable. |
| mma_test_ccip_addon.utes | 6 AV8B vs an enemy fleet, use your CCIP mode to bomb the enemy carrier's deck. |
| mma_test_frigate_addon.utes | Run the intro of this mission to see some automatic systems in action |
| mma_test_ground_addon.utes | Laser designator and manually guided TOW example mission (also included BMP-2 and BRDM-2 missiles). |
| mma_test_replace_addon.utes | Your Harrier vs 3 Su34's with replaced BIS missiles. |
| mma_test_sams_addon.utes | Avenger and Tunguska with HUD systems and BTR90_HQ and LAV25 with MCC systems, all acting as SAM launchers for players as gunners (remember, the MCCs are activated via menu action). |
| mma_test_scud_addon.Chernarus | Missiles vs Missiles, or SCUDs vs Patriots. |
| mma_test_sys_addon.utes | Test any ArmA2 plane or chopper with Mando Missile systems (note that some systems such as the TV cameras are activated via the action menu), in some cases pilot and gunner systems are different. To test the desired vehicle or position, change its control option inthe editor to 'Player' |
| mma_test_sys_others_addon.utes | Same as previous one, but for all Mike's GLT F-16 variants and Gnat's B-52. |
| mma_test_torm1_addon.utes | Mando Missile AI handling TorM1 simulated launchers. |
| mma_tv_k52_addon.Chernarus | You are the gunner in a Ka52, use the TV camera to guide your pilot, locate and destroy air and ground targets and/or lock on targets and transmit their positions so that a friendly unit may engange them. |
| mando_missile_lab_addon.Chernarus | Dialog based Missile configurator tool. It allows you to play and experiment will all Mando Missile parameters. |
| mando_gun_arma.utes | Example of Mando Gun ArmA working with Phalanx turret models |
| mma_test_kuz.utes | Gnat's Kuznetsov carrier full setup with Mando Missiles and Mando Guns |
| mma_test_portables_addon.utes | Javelin, Metis, Igla, Stinger, TOW and Strella customized HUDs for portable launchers |

| mma_test_uav_addon.Utes | UAV control from MCC TV camera |
|---|---|
| mma_rearm_addon.Utes | Rearm action and dialog, you can also check SEAD loadouts for AV8B and Su34 and try to hunt down two active SAMs placed to the West in the sea. |
| mma_test_sys_ffaa_addon.utes | Same as mma_test_sys_addon.utes but with FFAA Tigre |
| mma_test_sys_ace_addon.utes | mma_test_sys_addon.utes but with ACE 2 planes and choppers |
| mma_test_sam_site.utes | SAM site with main radar and 3 launchers |
| mma_test_f4_addon.Chernarus | Eble's F4 Phantom working hunting enemy SAMs |
| mma_script_suite.utes | Example mission using the script suite (check its init.sqf and description.ext files) |
| mma_test_su33_addon.Chernarus | Gnat's Su33 test with AS-4 missiles. |
| mma_test_f4_addon.Chernarus **<- NEW** | Eble's F14 vs enemy cruise missiles |

# Mission gamelogics for Mando Missile and Mando Gun
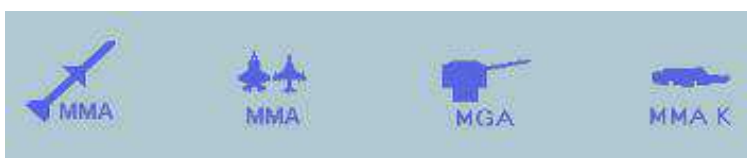


Mando Missile ArmA add-on includes four specialised gamelogics that you will find under **Game Logic->MMA Logics**

**Mando Missile ArmA init** (the first from the left): This one initializes the MMA engine automatically.
**Mando Missile ArmA full** (the second from the left): This one adds MMA support for all default BIS plane, chopper and vehicle classes given a human player in the Pilot or Gunner position, as well as systems for Javelin, Metis, Igla, Stinger and Strella portable missiles (or static launchers). It also initializes systems for some non BIS vehicles: Mike's GLT F16 family, Gnat's B52, CMA Mi28 and others. New actions are also provided to transmit laser designation if you have a LD. It also provides automatic counter-measures use for all the planes and choppers with non-human pilot and, finally, it causes automatic transformation of BIS fired missiles into Mando Missiles at launch time.
**Mando Gun ArmA init** (the second from the right): Intializes mando gun scripts for gun sounds and tracers and smoke effects.
**Mando Kuznetsov init** (the first from the right): Intializes all mando systems (missiles and guns) for Gnat's Kuznetsov carrier. To use this, place this gamelogic near the center of the Kuznetsov carrier you want to configure. If you have more than one Kuznetsov in your mission, just add one of these gamelogic for each carrier and make sure to place them close to the center of the ships.

Placing the first two gamelogics in a map ensures full initialization of default systems (do not include any of them more than once). Mando Missile automatic launchers should be configured via the traditional script executions in init.sqf. If you dont want to use default settings, dont include Mando Missile ArmA full in your mission and setup your custom systems in your mission's init.sqf file.

MCC and HUD systems provided by default when placing **Mando Missile ArmA full** gamelogic in your map are listed below. All the planes and choppers have flares and RWR, those marked in yellow also have ECM:

| Vehicle and position | HUD modes (cycle through them using L.Ctrl key) | Cameras (Activate them usi: menu actions) |
|---|---|---|
| A10 Pilot | AIM9<br>AGM65<br>AGM65 (ground) | LGB Camera<br>Maverick Camera |

| | | |
|---|---|---|
| | Navigation | |
| AH1Z Pilot | AIM9 (Helmet Mounted Display)<br>Navigation | Hellfire Camera (if gunner i<br>player) |
| AH1Z Gunner | - | Hellfire Camera |
| AV8B2 Pilot | AIM9<br>CCIP/Nav | - |
| AV8B Pilot | Navigation | LGB Camera |
| C130J Pilot | Navigation | |
| C130J Co-pilot and back seat | - | L. Gun Cam Ground mode<br>H. Gun Cam Ground mode<br>40mm Gun Cam Ground mo |
| F35B Pilot | AIM9<br>Navigation | LGB Camera |
| GLT_Falcon_AGM and family | AIM9<br>AIM120<br>AGM65<br>AGM65 (ground)<br>Navigation | - |
| GLT_Falcon_CAP and family | AIM9<br>AIM120<br>AIM7 (SARH)<br>Navigation | - |
| GLT_Falcon_mk82 and family | AIM9<br>CCIP/Nav Mk84<br>CCIP/Nav Mk82 | - |
| GLT_Falcon_MR and family | AIM9<br>AIM120<br>AGM65<br>AGM65 (ground)<br>CCIP/Nav Mk82 | - |
| GLT_Falcon_GBU and family | AIM9<br>AGM84 (Local)<br>AGM84 (Remote)<br>Navigation | LGB Camera<br>Harpoon Camera |
| GNT_B52 Pilot | CCIP/Nav | - |
| Ka52 Pilot | Vikhr - AA<br>Vikhr - AG<br>Vikhr - (Ground)<br>Navigation | - |
| Ka52 Gunner | Vikhr - AA (Helmet Mounted<br>Display)<br>Vikhr - AG (Helmet Mounted<br>Display)<br>Vikhr - (Ground) (Helmet<br>Mounted Display)<br>Navigation (Helmet Mounted<br>Display) | Vikhr AA<br>Vikhr AG |
| Mi24D Pilot | Navigation | Falanga Camera (if gunner i<br>player) |
| Mi24D Gunner | - | Falanga Camera |

| | | |
|---|---|---|
| Mi24P Pilot | Navigation | Ataka-V Camera (if gunner player) |
| Mi24P Gunner | - | Ataka-V Camera |
| Mi24V Pilot | Navigation | Shturm Camera (if gunner is player) |
| Mi24V Gunner | - | Shturm Camera |
| Su39 Pilot | R73<br>Kh29 (Laser)<br>Kh29 (Remote)<br>Navigation | - |
| Su25 Pilot | R73<br>CCIP/Nav | - |
| Su34 Pilot | R73<br>Kh29 (TV)<br>Navigation | Kh29 (TV) Camera (if gunn not player) |
| Su34 Gunner | R73 HMD | Kh29 (TV) Camera |
| MV22, UH1Y, Mi17_rockets_RU, Mi17_Ins, Mi17_CDF, Mi17_Civilian, Mi17_medevac_CDF,CYBP_AH6_US, CYBP_AH6_RACS,CYBP_AH6_NAPA, CYBP_AH6_CHDKZ,CYBP_MH6_US, CYBP_MH6_RACS,CYBP_MH6_NAPA,<br><br>CYBP_MH6_CHDKZ | Navigation | - |
| MH60S Pilot | Sonobuoy<br>Mu90 torpedo<br>Navigation | - |
| HMMWV_TOW Gunner | TOW | - |
| HMMWV_Avenger Gunner | Stinger | - |
| 2S6M_Tunguska Gunner | 9M311 | - |
| PMC AH64 Apache pilot | Nagivation | Hellfire Camera (if gunner i player) |
| PMC AH64 Apache pilot | - | Hellfire Camera |
| AH64D pilot | Hellfire (monocle)<br>Sidewinder (monocle) | Hellfire Camera (if gunner i player) |
| AH64D gunner | Hellfire (monocle) | Hellfire Camera |
| CMA Mi28 pilot | Navigation | Ataka-V Camera (if gunner player) |
| CMA Mi28 gunner | - | Ataka-V Camera |
| BMP-2 gunner | AT-5 | |
| BRDM-2 ATGM | AT-5 | |
| Eble's F4 pilot | AIM-7, AGM-88, CCIP for bombs | |
| Eble's F4 gunner | - | AIM-7 and AGM-88 camera |
| Eble's F14 pilot | AIM-9<br>AIM-54<br>AGM-65<br>AGM-65 GRND<br>GBU-12 CCIP | GBU-12 (if gunner is not pl |

| Eble's F14 gunner | - | AGM-65 TV<br>GBU-12 TV<br>AIM-54 TV |
| Gnat's Su33 | R-73 AA<br>R-27 AA (SARH)<br>Kh.29 TV<br>Kh.22<br>Kh.22 Remote<br>FB 250 CCIP<br>KB 500 CCIP | Kh.29 TV<br>Kh.22 TV (Remote)<br>Kh.22 SEAD<br>KB 500 LGB |

## MOD specific gamelogics



Mando Missile ArmA add-on includes two MOD specific gamelogics for FFAA and ACE 2 Mods that you will find under **Game Logic->MMA Logics**
Including these in your missions ensures automatic setups for these MODs.

# The HUD system

Mando Missile HUD provides a way to have a realistic and flexible HUD for any plane, vehicle or chopper. For any HUD it is possible to define one or more operation modes, each one might also be enslaved to a particular weapon while some others, like Navigation, have no weapon associated. When using the HUD, forget about BIS default keys to switch or fire weapons, lock on targets, etc. It is important to remember that Mando Missile HUD uses its own keys (which you can redefine as described later).

The HUDs will activate as soon as the player moves into the relevant crew position for qualifying vehicles. Menu actions are also automtically added to toggle HUD, change HUD's colour map and remap default HUD keys. Depending on the value of **mando_show_hint_global**, a hint explaining the keys will be displayed. The value of **mando_show_hint_global** is true by default. You can set it to false directly from your mission's init.sqf in case you dont want to see any hints:

   **mando_show_hint_global = false;**

Independently of the value of **mando_show_hint_global**, custom HUDs can override it setting **mando_show_hint** to true or false inside the custom HUD handler script.

## HUD structure

**A**: Weapon counters & current selected weapon (--)

**B**: Current HUD operation mode

**C**: Countermeasures counters & ECM state and counters. ECM may be in stby ECM:##, charging [ECM:##] or emitting >>ECM:##.

**D**: ASEC circle (if there is a locked on target). The bigger the circle, the greater % of hit (its radious varies with the calculated hit %). If no target selected, it acts as boresight area to lock on new targets.

**E**: Missile/Radar Track Box: If target is closer than 2Km, target type is displayed. A blue rhomb indicates the target is emitting ECM, otherwise the rhomb's color will be the selected HUD color for normal targets, white for remote targets and yellow for emitting radars (if your plane is SEAD capable).

**F**: Target Aspect Indicator: Quite important for IR shots against air targets, as the hit probability is much greater when an opponent's engines are oriented towards you as opposed to head-on encounters. This small triangle turns around the ASEC circle and shows the direction of the target compared with the direction of your vehicle (or handled weapon).

**G**: Current weapon ranges: AR stands for active range and applies only for missiles like AMRAAM with onboard active radar range (the missile flies in inertial mode until it activats its own radar), TR stands for Thrusted Range, or range with the missile engine having thrust. MR stands for Minimum range, do dont shoot if target is closer than that unless the target is static in front of you. TR and MR change depending on the speed of the launcher vehicle.

**H**: Target data, target type (if closer than 2km), target range, target altitude and TTI. TTI is estimated time to impact, which becomes important for targets BVR and SARH missiles. This provides a clue as to when it is safe to break the lock for SARH or laser guided missiles when the target is far enough to be able to track the missile and/or target visually to confirm missile impact or miss.

When a missile is incoming the RWR will be displayed.

Its center represents your plane or chopper, the green lines are the bearings of icoming missiles. Check the RWR carefully when a missile is aproaching as this will be your main tool to manoeuvre in the correct direction and drop flares. To maximize your survival chances, move so that the missile is at your 4,5 or 8,7 o'clock. The RWR circle radious equates to 2Km.

Some planes incorporates a forward looking radar which is displayed when the aircraft sensors detect contacts. The radar self scales its range from 3km to 12Km and is hidden automatically if the aircraft radar doesnt detect contacts during 3 seconds. If there is a locked on target, an small line shows its relative direction with your plane, the line and the target are displayed in a lighter green.



## HUD modes

Your plane, chopper or vehicle might have one or more of the following modes:

- Normal Local Modes: This is the most commonly used, and the HUD displays potential targets detected by your vehicle's sensors. In some of these modes, if you read SARH, Laser or SACLOS, dont break the lock until fired missile fails or hits the target, these more require to keep the target locked on all the time.
- Remote Mode: The HUD shows remote targets detected by other units, for example Laser Designator transmitted by players, or marked positions and targets transmitted from MCC camera systems (XMIT option), or just added as remote targets by a script.
- Ground mode: Available in some planes like the A10. When you press lock on key, the ground position centered in your hud's small green cross becomes the target.
- Navigation: The HUD displays nearby locations. Mission editor can create special locations which will be displayed in red and with extra text added by the mission editor, for example to indicate a secondary target, or secondary airfield, etc.
- CCIP: Sometimes mixed with the navigation mode, in this mode you will see a line and a rhomb at its end. The romb indicates the continuously calculated impact point for bombs. You can see this mode in AV8B2, S25s, some Mike's F16 variants and Gnat's B52.
- Special Sonobuoy mode: This mode is present in MH60S. In sonobuoy mode you can deploy sonobuoys over the sea. The sonobuoys will start transmitting sea (also undersea) targets detected by them, and these are "remote" targets. Then you can switch to Mu90 mode, lock on any of the transmitted target, and drop a torpedo.
- Special Mu90 mode: This mode is present in MH60S and works in conjuntion with Sonobuoy mode. In this mode the HUD will display targets detected by friendly sonobuoys (remote white targets), you can lock on any and drop a Mu90 torpedo. Note that to be able to drop torpedoes you will need Planck's Mu90 torpedo add-on (included in the zip).

An example of combinend CCIP & Navigation modes:

## Custom HUDs

Mando Missile allows the configuration and creation of custom HUDs, which run in parallel to the core MMA HUD and getting all the info provided by it. The custom HUD can translate that info into the desired graphical representation using a set of custom graphic controls provided by MMA. Examples of custom HUDs are the Helmet Mounted Displays as well as customized sight for portable weapons.

## Helmet Mounted Displays

You will find them for F35B, AH1s pilot, Su34 gunner, Ka52 gunner, Eurocopter Tigre pilot and AH64D pilot and gunner.
Special note about AH64D monocle: For any crew member it is possible to transmit his current target to the other crew member, as long as the other crew member has the HUD in Hellfire-Remote mode.To do that, lock on a target and press the "Special" key (by default it is "**G**").

## HUDs for Portable Sytems

MMA also incorporates by default customized HUDs for portable systems (Javelin, Metis, Igla, Stinger and Strela). These are automatically enabled with the presence of **Mando Missile ArmA full** gamelogic in your mission. The operation of these systems is as follows:

   **Javelin:** To lock on a target aim at it in optics mode and press Lock Targets key (TAB by default), and try to keep the target centered in your sight. You will see am open box being formed around the target, if you keep the target centered the box will start closing slowly, and when fully closed the target will be locked on. Then a white crossair will follow the target and you can fire a missile. To cycle through available modes press MMA Cycle modes key (L. Ctrl by default). The modes are TOP (if the target is far enough, the javelin will climb and then dive on the target), DIR (the missile will go straight on the target) and DIR + GROUND (in this mode you will lock on ground positions instead of enemy vehicles). Note that to get a lock with DIR or TOP modes the target must have its engine turned on. There are three different visor modes, DAY, WHOT and BHOT, press MMA flares key (L. SHIFT by default) to cycle through them. Note that WHOT and BHOT modes are available only when "NIGHT" lamp stops blinking.

  **Metis:** This missile is manually guided, so you dont need to get any lock before firing. There are two small lamps in the visor, the upper left one, when blinking gray/yellow indicates that the IR visor is charging. When charged you will be able to cycle through IR modes pressing MMA flares key (L. SHIFT by default). After firing a missile, guide it moving the sight, a mark will show where the missile is and a yellow lap in the lower right corner will indicate that the missile is in-flight and under your control, when the control is lost the lamp turns red. If you try to change the course of the Metis too abruptly, you might lose the control of the missile, to recover the control aim with the sight to the missile in-flight.

**Stinger, Igla and Strella:** There is no visible HUD symbology for these systems, all the targeting and target tracking is audio based. To lock on a target, center it on your sight and press Lock Targets key (TAB by default). If a potential target is detected the system will start emitting a sound, first with low frequency and if the target keeps centered on the sight the frequency will increase until it becomes a constant growl sound, which means you got a solid lock. At this time you can fire the missile.

## BIS Radar block in HUD mode

By default BIS Radar is not blocked. But you can block it with two semitransparent red areas, leaving only the center area clear. The effect is that friends and foes will look the same when they are covered by the red areas, so you will have position info, but not side info.
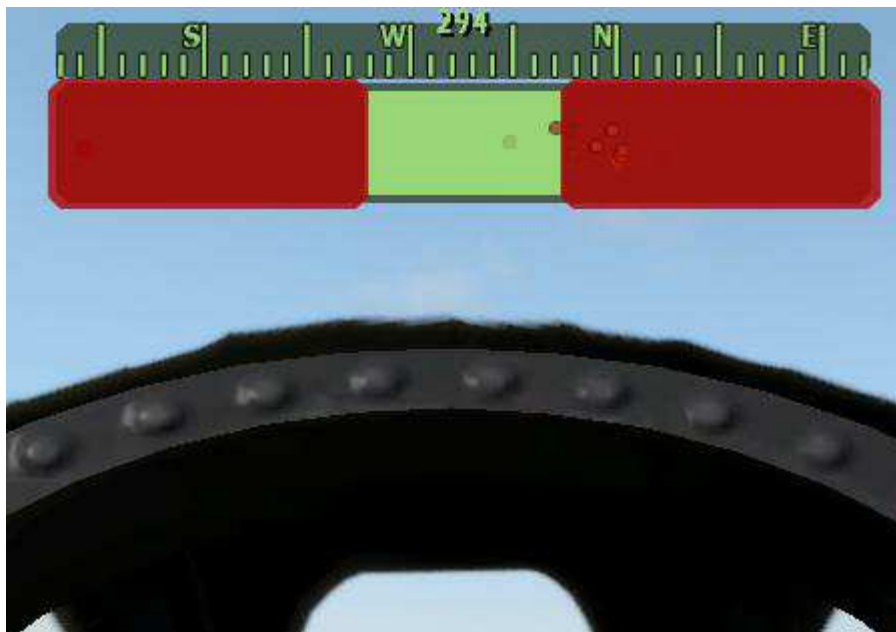
If you want to turn on these red bars, add
   **mando_hide_bis_hud = true;**
to your mission's init.sqf after Mando Missile initialization.
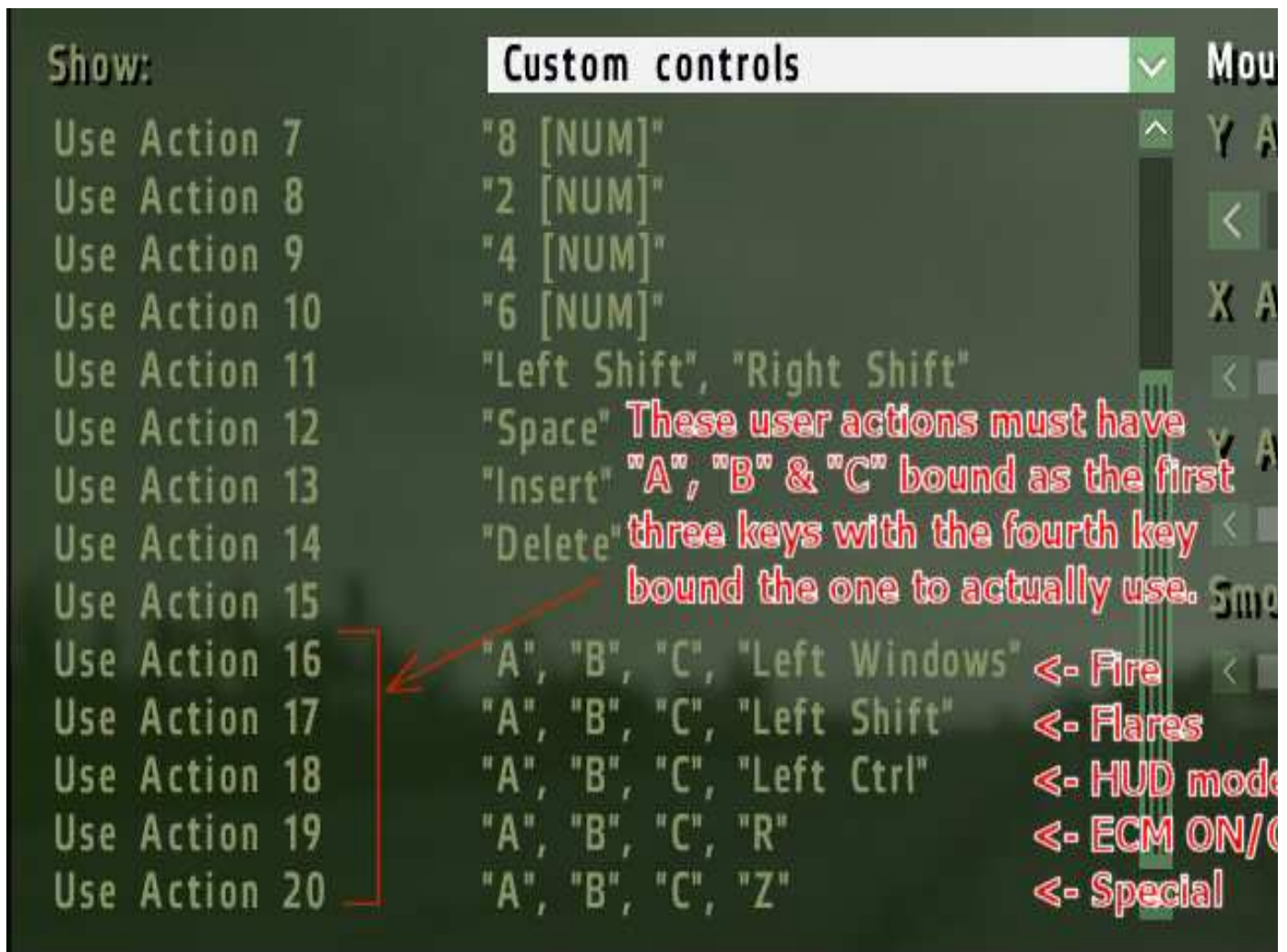

## HUD Key bindings

By default, the HUD will use the following keymap:
- **Left CTRL**: Cycle through HUD modes.
- **Left Win**:  Fire
- **Left SHIFT**:  Drop countermeasures.
- **R**: Turns ECM on.
- **Default BIS key to lock tagters**: lock on target (TAB by default).
- **G**: Special key used in some custom systems like AH64 monocle (to transmit current target to the other crew member having the other crew member Hellfire - Remote HUD mode selected).

When the HUD activates, there is a menu action to redefine the default keys. You can also define permanent HUD keys using ArmA2 user actions from 16 to 20 and assigning them a special sequence that Mando Missile will recongnize (A, B, C, desired key). Be aware that desired key must be a single key, not a combination or joy/mouse buttons. If you do this in the middle of a game, you will need to reload the mission to the changes to make effect.

The following picture shows an example:

| Show: | Custom controls | Mou |
| --- | --- | --- |
| Use Action 7 | "8 [NUM]" | Y A |
| Use Action 8 | "2 [NUM]" | |
| Use Action 9 | "4 [NUM]" | |
| Use Action 10 | "6 [NUM]" | X A |
| Use Action 11 | "Left Shift", "Right Shift" | |
| Use Action 12 | "Space" | |
| Use Action 13 | "Insert" | |
| Use Action 14 | "Delete" | |
| Use Action 15 | | Smg |
| Use Action 16 | "A", "B", "C", "Left Windows" | <- Fire |
| Use Action 17 | "A", "B", "C", "Left Shift" | <- Flares |
| Use Action 18 | "A", "B", "C", "Left Ctrl" | <- HUD mode |
| Use Action 19 | "A", "B", "C", "R" | <- ECM ON/O |
| Use Action 20 | "A", "B", "C", "Z" | <- Special |

These user actions must have "A", "B" & "C" bound as the first three keys with the fourth key bound the one to actually use.

# Mando Missile ArmA Rearming System

The MMA rearming system allows you to select between multiple weapon configurations as well as reloading virual ammo for virtual weapons (like the guns of C130J, or missiles of MCC systems like TorM1) or flares.

To activate the rearming dialog you must be the driver of the vehicle, have its engine stopped and have some ammo truck nearby. A new "MMA Rearm" action menu will be available, activate it and the rearming dialog will be displayed.

Next to do is to select a rearming source, which might be any ammo truck nearby. You can turn the camera view with the small arrows at the lower right corner, zoom in/out with mouse wheel and drag/drop the rearming dialog. Once you "see" the desired ammo truck, click on it with the mouse, a circle will mark it and the rearming and weapons source level will display the current level of the selected truck (if 0% you will need to select a different rearming source).

Once you have a selected rearming source you can select the desired weapon configuration and click the "Rearm vehicle" button.

There is a global array named **mando_rearm_sources_classes**. This contains an array of allowed classes acting as rearming sources . At the beginning of your mission, after MMA is initialized, you might set it up to the desired contents for your particular mission in the init.sqf. By default, its value is set to:

**mando_rearm_sources_classes = ["MtvrReammo", "KamazReammo", "UralReammo_INS", "UralReammo_CDF", "WarfareReammoTruck_USMC","WarfareReammoTruck_RU","WarfareReammoTruck_Gue", "DFReammo_Base"];**

There is a global array named **mando_weapons_forbidden**. This contains an array of forbidden weapons or/and magazine names. At the beginning of your mission, after MMA is initialized, you might set it up to the desired contents for your particular mission in the init.sqf, or just set it empty to allow all the configurations. By default, its value is set to:

**mando_weapons_forbidden = ["ACE_B61BombLauncher"];**

There is another global var named **mando_weapon_master** which is set to false by default, set it to true to access to more weapon and magazines so you cancreate your own configurations instead of using the pre-created ones.

To set the Rearm level of an ammo truck back to 100% you can execute the following:
**ammo_truck setVariable ["mando_source_level", 100];**

# MCCs and TV systems

These are activated via menu actions, in both cases press F1 with the system active to have online help displayed.

# Mando Gun ArmA

Mando Gun ArmA provides automatic guns which can be setup using mando_gunattacker.sqf script, or by placing mandoturret object in the map and giving it a side. Mando Turret object is under Empty->Mando Turret->mando turret. If you just add it to your mission map, then you will be able to use it in conjuntion with mando_gunattacker.sqf to customize your guns. But if you want to use the default configuration (so no need to add any script execution from your init.sqf) all you need to do is to indicate the mandoturret's side setting its internal "mando_gun_side" variable in its init field directly from the editor. For example, to have an OPFOR Phalanx like gun, all you need to do is to put a mando turret in the map and add the following to its init field:

**this setVariable ["mando_gun_side", east]**

Note that these turrets automatically configured by default will work as AA guns also anti-missile capable with an effective range of 1.5Km.

You can also deactivate/activate a Mando Gun setting its object internal variable "mando_gunattacker_on" to false or true. For example (deactivation):

**mygun1 setVariable ["mando_gunattacker_on", false]**

For more details, checl mando_gun_arma.utes mission included in the zip, as well as mma_test_kuz.utes where you will see two phalanx attached to the Kuznetsov carrier.

# Credits

**Defunkt**, aside from pretty good ideas, he provided sounds, the outstanding images of the RWRs for east and west planes and fine tuned all the PAAs present in the pack, he also modified Raptor6 MFD to include "NTSC" effect as well as some nice pp effects for older type cameras. Customized MMA HUDs including HMD and AH64 monocle, as well as Javelin, Metis, Stinger, Strela and Igla portable missiles.

**Raptor6,** do you like the fantastic background of the TV systems? it is from him.

**Deanosbeano and Scars** who provided some mando turret models usable for the Phalanx gun.

**Kju** for the MMA_XEH_AutoLaunch.pbo

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