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| Megadroid’s Mission Mod |
| Reference Manual  Version 1.0 |
|  |
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| **1/1/2011** |

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# Introduction

This manual describes all features in Megadroid’s Mission Mod (MMM). It is essentially a mirror of the online documentation available at the Fleet Operations guide. It will provide a reference for all types and libraries in MMM available to Lua as well as explanations of how MMM works. Tutorials will be released separately.

## This Version

The first version of MMM includes the following:

* Armada Features
  + GameObject, TerrainObject and Explosion branches of the Entity class hierarchy
  + Partial coverage of Ordnance branch of the Entity class hierarchy
  + Team and Race management
  + Cineractive control
  + Media playback
  + Saving and loading of data
  + User Interface
  + Map configuration
  + Objectives
  + Paths and Pathing
* Helper Features
  + Entity Hooking system – track replace and destruction of Entities
  + Monitors
  + Timers
  + Entity searching
  + Application framework
* Tools
  + Packer application – pack your mission scripts into one file.

## Next Version

The next version of MMM will feature the following additions:

* Armada Features
  + Complete coverage of Ordnance branch of Entity class hierarchy
  + Weapon class and subclasses
* Fleet Operations Features
  + Exposure of Fleet Operations classes where possible

# Libraries

## Armada

The Armada library contains functions that have a game-wide effect.

### Class Functions

#### getTime

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | Time elapsed since the start of the game |

#### setAllowSave

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True to enable saving from the menu |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setUpdateTime

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The interval to update the script at |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setAllowWarp

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True to enable warp travel |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### isHost

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if the local player is the host of the game |

#### getSeed

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | The value used by Armada to seed the random for all players in this game |

#### getLocalSlot

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | The index of the local player |

## Camera

### Class Functions

#### center

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector)  or  [GameObject](#_GameObject)  or  [Path](#_Path) | Either a [Vector](#_Vector), a [GameObject](#_GameObject) or a [Path](#_Path) for the camera to centre on. |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### zoom

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The new zoom level |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### project

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The [Vector](#_Vector) to project to screen space |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The projected screen space [Vector](#_Vector) |

## Cineractive

### Class Functions

#### start

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### finish

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### isActive

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if Cineractive mode is active |

#### lookAtGameObject

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [GameObject](#_GameObject) | The [GameObject](#_GameObject) to look at |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### lookAtPosition

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The position to look at |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### lookFromPosition

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The position to look from |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### lookFromGameObject

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [GameObject](#_GameObject) | The [GameObject](#_GameObject) to look from |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setCameraOffset

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The offset to apply to the camera position |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### lookFromPath

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Path](#_Path) | The [Path](#_Path) to look from |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

## Debug

The Debug library allows you to toggle on various features to help when debugging your mission. Generally they should not be used in the final release of your mission.

### Class Functions

#### getDebugDraw

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if debug draw is enabled |

#### setDebugDraw

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True to enable debug draw |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### createConsole

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### getKeyState

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The key to check |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if the key is down |

## Load

### Class Functions

#### load

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setPosition

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The new position in the stream |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### read

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| DataType | The type of data to read from the stream |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String  or  Number  or  Boolean | The type that was read – returned type dependent on DataType parameter |

#### getLength

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | Length of the stream |

## Map

### Properties

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Access | Type | Description |
| min | RW | Vector | Minimum coordinate |
| max | RW | Vector | Maximum coordinate |

## Media

### Class Functions

#### playSound

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | Sound filename to play |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### playMusic

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | Music filename to play |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### playMovie

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | Movie filename to play |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### stopMovie

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

## Mission

### Class Functions

#### finish

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if the mission was a success |
| Number | Time to finish the mission |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

## Objectives

### Class Functions

#### getCount

Get the number of objectives that are currently shown on the objectives display.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | The number of objectives in the objectives display |

#### getSummaryTitle

Get the title of the summary section. This is the title just below the main window title.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The summary title of the objectives display |

#### getObjectivesTitle

Get the title of the objectives display; this is show at the top of the objectives window.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The objectives title of the objectives display |

#### getObjectivesText

Get the text displayed below the summary title. This is generally some description of the general situation of the mission.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The objectives text of the objectives display |

#### getObjectivesHeader

Get the title that is displayed above the objectives list.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The objectives header of the objectives display |

#### setSummaryTitle

Set the summary title for the objectives window. This is displayed below the main title and above the mission description.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The new summary title of the objectives display |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setObjectivesTitle

Set the main title for the objectives window. This is shown at the top of the window.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The new objectives title of the objectives display |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Nothing |

#### setObjectivesText

Set the description of the mission. This is shown below the summary title and should explain some of the background of the mission.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The new objectives text of the objectives display |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setObjectivesHeader

Set the header that appears above the objectives list.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The new objectives header of the objectives display |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### add

Add a new objective to the objectives display.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The text value of the new objective |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### getObjective

Get the text value of the objective with the given 1-based index.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The 1-based index of the objective to retrieve |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The text value of the objective |

#### getObjectiveState

Get the state (whether or not the objective is complete) of the objective at the given 1-based index.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The 1-based index of the objective to retrieve |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | The Boolean state of the objective |

#### setObjective

Set the text value of the objective at the specified 1-based index.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The new text value of the objective |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### setObjectiveState

Set the state (whether or not the objective is complete) of the objective at the given 1-based index.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | The new Boolean state of the objective |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### remove

Remove the objective at the specified index from the list.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The 1-based index of the objective to remove |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### load

Load objectives from the specified filename. The file should have been placed in the objectives directory of A2.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The filename to load objectives from |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### show

Set if the objectives display window is active or not.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True to show the objectives display |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

### Notes

As well as being able to show normal text in the objectives display you can also use special characters that are automatically replaced with the appropriate resource image – this can make your objectives clearer for those playing your mission.

## Path

#### new

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The name for the new path |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Path | The new Path instance |

#### get

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | The name of the path to retrieve |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Path | The Path instance, or nil |

### Instance Functions

#### count

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Number | The number of points in the path |

#### getPoint

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The 1-based index of the point to retrieve |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The position of the point |

#### setPoint

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| Number | The 1-based index of the point to update |
| [Vector](#_Vector) | The new position of the point |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### append

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The new point to add to the end of the Path |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

#### prepend

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [Vector](#_Vector) | The new point to add to the beginning of the Path |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Returns nothing |

## Race

### Instance Functions

#### getName

#### getDisplayName

#### getBoardingStrength

#### getRepairStrength

## Save

## TextInput

## UI

## Vector

Vector, 3D space, point and so on.

### Properties

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Access | Type | Description |
| x | RW | Number | X component |
| y | RW | Number | Y component |
| z | RW | Number | Z component |
| length | R | Number | Magnitude of the vector |
| lengthSquared | R | Number | Square magnitude of the vector |

### Class Functions

Constructors (default, (float, float, float))

### Instance Functions

Normalize

## Colour

The Colour class is used to represent colours as 3 floating point values, representing red, green and blue.

## Team

# Entities

Every object you see in the world in Armada II is an Entity of some kind. Using the Entity class (and subclasses) you can query and manipulate them. Working with entities is a common task when making missions.

## Entity

Entity is the base class for all entities in the world. Every entity includes the functionality of the Entity class.

### Properties

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Access | Type | Description |
| position | RW | Vector | Position of the entity on the map |
| scale | RW | Vector | World scale of the entity |
| valid | R | Boolean | Checks if the entity is valid |

### Instance Functions

The Entity class has the following member functions.

#### isType

Check to see if an Entity is of the given type. This will return true if the Entity is either the type or a type derived from the type specified. You should use this function to make sure that the Entity are using has the member functions you want to call.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [EntityType](#_EntityType_1) | A member of the [EntityType](#_EntityType_1) enumeration |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if the Entity is of the specified type |

#### canTeamSee

#### replace

This method allows you to replace an entity with another type by specifying the new ODF to use.

#### hide

#### setDisableRender

#### hook

The hook method allows you to register to be notified when certain events happen. Currently you can register to be informed when an entity is destroyed or when it is replaced (via either FO *replaceweapon* or the Entity:replace function). A function you specify will be called and you can take the appropriate action required.

### Inherited By

The following classes derive from the Entity class:

* [GameObject](#_GameObject)
* [Explosion](#_Explosion)
* Ordnance

### Notes

#### Validation

The *valid* property is one of the most important parts of using the Entity class. It checks to make sure that the Entity referred to still exists and updates the Entity reference in the event that the actual object has been replaced.

You should call this function before you use an Entity and only continue if the Entity is valid. Using an invalid Entity will cause an error.

## GameObject

The GameObject class represents Entities that have some kind of permanent presence, such as ships and terrain elements.

### Functions

### Inherits

GameObject inherits the following classes:

* [Entity](#_Entity)
* ResourceInterface

### Inherited By

The following classes inherit from GameObject:

* [Craft](#_Craft)
* [TerrainObject](#_TerrainObject)
* ConstructionObject

### Notes

## Craft

The Craft class is used for ships and stations.

### Functions

### Inherits

Craft inherits the following classes:

* [GameObject](#_GameObject)

### Inherited By

Craft is inherited by the following classes:

* [Colony](#_Colony)
* [CargoShip](#_CargoShip)
* [RepairShip](#_RepairShip)
* [Scavenger](#_Scavenger)
* [SensorArray](#_SensorArray)
* [ResearchPod](#_ResearchPod)
* [MineArray](#_MineArray)
* [Freighter](#_Freighter)
* [PlanetMiningBase](#_PlanetMiningBase)
* [Producer](#_Producer)

### Notes

## Colony

Colony represents the colony ships as seen in stock Armada II.

### Functions

### Inherits

Colony inherits the following classes:

* [Craft](#_Craft)

### Notes

## CargoShip

### Functions

### Inherits

CargoShip inherits the following classes:

* [Craft](#_Craft)

### Notes

## RepairShip

### Functions

### Inherits

RepairShip inherits the following classes:

* [Craft](#_Craft)

### Notes

## Scavenger

### Functions

### Inherits

The Scavenger class inherits the following classes:

* [Craft](#_Craft)

### Notes

## SensorArray

### Functions

### Inherits

The SensorArray class inherits the following classes:

* [Craft](#_Craft)

### Notes

## ResearchPod

### Functions

### Inherits

The ResearchPod class inherits the following classes:

* [Craft](#_Craft)

### Notes

## MineArray

### Functions

### Inherits

The MineArray class inherits the following classes:

* [Craft](#_Craft)

### Notes

## Freighter

### Functions

### Inherits

The Freighter class inherits the following classes:

* [Craft](#_Craft)

### Notes

## PlanetMiningBase

### Functions

### Inherits

The PlanetMiningBase class inherits the following classes:

* [Craft](#_Craft)

### Notes

## Producer

A producer is any craft that can manage a build queue, or make something. This includes both shipyard type building and that undertaken by constructors as well. The Producer class extends the Craft class to allow you to query and manipulate the build queue.

### Functions

### Inherits

Producer inherits the following classes:

* [Craft](#_Craft)

### Inherited By

Producer is inherited by the following classes:

* [Planet](#_Planet)
* [ConstructionRig](#_ConstructionRig)
* [MiningStation](#_MiningStation)
* [Shipyard](#_Shipyard)
* [Evolver](#_Evolver)
* [ResearchStation](#_ResearchStation)

### Notes

## Planet

### Functions

### Inherits

Planet inherits the following classes:

* [Producer](#_Producer)

### Notes

## ConstructionRig

### Functions

### Inherits

ConstructionRig inherits the following classes:

* [Producer](#_Producer)

### Notes

## MiningStation

### Functions

### Inherits

MiningStation inherits the following classes:

* [Producer](#_Producer)
* ResourceTransferInterface

### Inherited By

MiningStation is inherited by the following classes:

* [TradingStation](#_TradingStation)

### Notes

## TradingStation

### Functions

### Inherits

TradingStation inherits the following classes:

* [MiningStation](#_MiningStation)
* ResourceTransferInterface

### Notes

## Shipyard

### Functions

### Inherits

Shipyard inherits the following classes:

* [Producer](#_Producer)

### Inherited By

Shipyard is inherited by the following classes:

* [Starbase](#_Starbase)

### Notes

## Starbase

### Functions

### Inherits

Starbase inherits the following classes:

* [Shipyard](#_Shipyard)
* ResourceTransferInterface

### Notes

## Evolver

### Functions

### Inherits

Evolver inherits the following classes:

* [Producer](#_Producer)

### Notes

## ResearchStation

### Functions

### Inherits

ResearchStation inherits the following classes:

* [Producer](#_Producer)

### Notes

## TerrainObject

### Functions

### Inherits

TerrainObject inherits the following classes:

* [GameObject](#_GameObject)

### Inherited By

TerrainObject is inherited by the following classes:

* [AsteroidField](#_AsteroidField)
* [UtritiumBall](#_UtritiumBall)
* [Scrap](#_Scrap)
* [BackgroundObject](#_BackgroundObject)
* [LatinumNebula](#_LatinumNebula)
* [AreaEffectObject](#_AreaEffectObject)

### Notes

## AsteroidField

### Functions

### Inherits

AsteroidField inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Notes

## UtritiumBall

### Functions

### Inherits

UtritiumBall inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Notes

## Scrap

### Functions

### Inherits

Scrap inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Notes

## BackgroundObject

### Functions

### Inherits

BackgroundObject inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Inherited By

BackgroundObject is inherited by the following classes:

* [BackgroundPlanet](#_BackgroundPlanet)

### Notes

## BackgroundPlanet

### Functions

### Inherits

BackgroundPlanet inherits the following classes:

* [BackgroundObject](#_BackgroundObject)

### Notes

## LatinumNebula

### Functions

### Inherits

LatinumNebula inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Notes

## AreaEffectObject

### Functions

### Inherits

AreaEffectObject inherits the following classes:

* [TerrainObject](#_TerrainObject)

### Inherited By

AreaEffectObject is inherited by the following classes:

* [Nebula](#_Nebula)
* [Wormhole](#_Wormhole)
* [BlackHole](#_BlackHole)
* [IonStorm](#_IonStorm)

### Notes

## Nebula

### Functions

### Inherits

Nebula inherits from the following classes:

* [AreaEffectObject](#_AreaEffectObject)

### Notes

## Wormhole

### Functions

### Inherits

Wormhole inherits from the following classes:

* [AreaEffectObject](#_AreaEffectObject)

### Notes

## BlackHole

### Functions

### Inherits

BlackHole inherits from the following classes:

* [AreaEffectObject](#_AreaEffectObject)

### Notes

## IonStorm

### Functions

### Inherits

IonStorm inherits from the following classes:

* [AreaEffectObject](#_AreaEffectObject)

### Notes

## Explosion

### Functions

### Inherits

Explosion inherits the following classes:

* [Entity](#_Entity)

### Inherited By

Explosion is inherited by the following classes:

* FireballExplosion
* ShockwaveExplosion

### Notes

# Helpers

As well as exposing an interface to the classes of Armada 2, MMM provides a set of helper utilities to make creating missions easier. These helpers and their usage are described in this section.

## EntityFinder

## Timers

## Monitors

The Monitor class will monitor the state of a condition and inform you when the condition changes via callback functions. You can register to be informed when the Monitor is in various states. Monitors are an important part of mission scripting and offset a lot of management into MMM itself, making your mission script simpler.

### Class Functions

#### new

Create a new Monitor with the specified ID. The ID is used to refer to the Monitor when searching and can also be used in your mission script to identify it.

The initial state indicates how the Monitor should start off. This is useful when you have hooks attached and you want to control when they are called. If you have a hook OnFalse which you only want to activate after the Monitor has gone from false, to true and back again you can set the initial state to false. If the initial state was true, the OnFalse hook would be called on the first update of the Monitor if the condition is false.

You must specify a [condition function](#_Condition_and_Hook) for your Monitor to monitor. This is a function that the Monitor will call. You can optionally specify a table for the condition if this is an instance function. You can also provide an argument that will be passed to the condition function along with the standard arguments. If you do not need a table or an argument you can pass nil for these.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | ID |
| Boolean | Initial State |
| Table | Condition Table |
| Function | Condition Function |
| Any | Condition Argument |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Monitor | The new Monitor instance |

#### find

Find an existing Monitor by searching for by its ID.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| String | ID |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Monitor | The result of the search. May be nil. |

#### getAll

Get all currently active Monitors.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Table | A table containing all currently active Monitors |

### Instance Functions

#### getID

Get the string identifier of the Monitor.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| String | The ID of the Monitor. Can be nil if Monitor is no longer valid |

#### hook

Register a function to be called when the specified event occurs.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| [MonitorHook](#_Hooks) | The hook event to register for |
| Table | The callback table |
| Function | The callback function |
| Any | An argument to pass to the callback |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Does not return anything |

#### stop

Destroy the Monitor. When this function is called the Monitor will be marked for deletion and will become invalid before the next update pass. You can hook *OnStop* to be notified when the Monitor is about to be destroyed.

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| None | Does not return anything |

#### isValid

Check to see if the Monitor is still valid (it has not been stopped).

##### Arguments

|  |  |
| --- | --- |
| Type | Description |
| None | Takes no arguments |

##### Returns

|  |  |
| --- | --- |
| Type | Description |
| Boolean | True if the Monitor is valid |

### Hooks

The [MonitorHooks](#_MonitorHook) enumeration contains all the different types of hook you can use with the Monitor class. Access them via MonitorHooks.*HookName*. See [MonitorHooks](#_MonitorHook) in the [Enumerations](#_Enumerations) section.

### Condition and Hook Functions

The Condition function should have the following signature:

*function [Table:] conditionFunctionName( monitor, argument )*

A hook function should have the following signature:

*function [Table:] hookFunctionName( monitor, hookType, argument )*

The *monitor* argument is the actual *Monitor* that is raising the event. The *hookType* argument indicates what type of Hook was called. The *argument* parameter is the value that you provided when you created the *Monitor* – this may be nil.

### Notes

*Monitor*s must be managed by the script – they will live forever unless explicitly destroyed. You can destroy a *Monitor* by calling [*stop*](#_stop) on it. A common place to do this is the hook callback function if this is a one off event. Otherwise, you can either store the *Monitor* yourself when you create it or you can retrieve it using [*Monitor.find*](#_find)or [*Monitor.getAll*](#_getAll).

Once you have stopped a *Monitor* it is invalid – you should not use it. You can call the [*isValid*](#_isValid) function to check to make sure that the *Monitor* is valid before using it. Using an invalid monitor will result in a script error.

### Examples

Some examples will go here:

* Standalone function already defined
* Standalone function defined in the create call
* “Class” function
* Class and standalone functions with arguments

## Entity Hooking

Entity Hooking is a feature of MMM that allows you to register a function to be called when the state of an Entity changes. This allows you to update your mission code appropriately, or to make changes to the Entity. Currently there are hooks available for when an Entity is destroyed and when an Entity is replaced (via *replaceweapon* or through script).

### onDestroy

### onReplace

# Enumerations

## DataType

* DataType.String
* DataType.Boolean
* DataType.Number

## EntityType

* EntityType.Entity (do the rest)

## Resource

* Resource.Crew
* Resource.Officer
* Resource.Dilithium
* Resource.Latinum
* Resource.Metal
* Resource.Biomatter
* Resource.Tritanium
* Resource.Supply
* Resource.CollectiveConnections

## Relation

* Relation.Enemy
* Relation.Neutral
* Relation.Ally

## CallbackResult

* CallbackResult.Remove
* CallbackResult.Repeat

## Order

Oh gods

## Alert

* Alert.Red
* Alert.Yellow
* Alert.Green

## MovementAutonomy

* MovementAutonomy.Low
* MovementAutonomy.Medium
* MovementAutonomy.High

## WeaponAutonomy

* WeaponAutonomy.None
* WeaponAutonomy.Medium
* WeaponAutonomy.High

## System

* System.Engines
* System.LifeSupport
* System.Shields
* System.Weapons
* System.Sensors

## TradeDirection

* TradeDirection.To
* TradeDirection.From

## WormholeState

* WormholeState.Closed
* WormholeState.Closing
* WormholeState.Open
* WormholeState.Opening

## IonStormState

* IonStormState.Closed
* IonStormState.Closing
* IonStormState.Open
* IonStormState.Opening

## MonitorHooks

* MonitorHooks.OnTrue
* MonitorHooks.OnFalse
* MonitorHooks.WhileTrue
* MonitorHooks.WhileFalse
* MonitorHooks.Stop