

Ancient Warfare – The Basics

General Information

Ancient Warfare is a modification for Minecraft that adds a variety of game enhancements; new blocks, new entities, and a template based world-generation structure generator.

Beginning with the 2.x releases Ancient Warfare has been split into a multi-module release. There is a single Core module that all other modules rely on for shared functionality. Each other module may be installed individually, or in any other combination desired. The non-core modules are – Automation, NPCs, Structure Generation, and Vehicles. Each of these modules focuses on a single aspect of the mod

Section I - Core Module

General

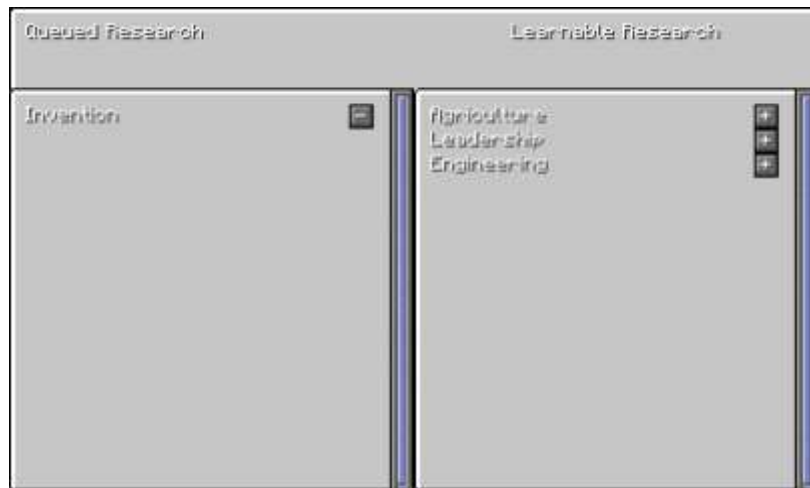
The Core module in Ancient Warfare offers very little functionality on its own. It merely contains the framework that the rest of the modules use to communicate between one another, and any code shared amongst multiple modules. The Core module is mandatory if any of the other modules are to be installed.

The Core module adds the Research Station and Engineering Station blocks, the Research Book, Backpack, Quill (research), and Hammer (work/block-rotator/weapon) items. It additionally contains many of the frameworks and systems used by the rest of the modules, such as the research and crafting systems and improved item use/interaction systems.

Research System



Research Station GUI



Research Queue GUI

The Research Station may be crafted in a normal vanilla workbench. For the precise recipe, see NEI or similar. Once crafted, it may be placed into the world like any other block. It has a single externally-accessible inventory – the slots labeled as ‘Input’.

To begin researching, place your research book into the top-left slot (below the name) (research book is crafted in a normal crafting bench). Press the 'Adjust Research Queue' button to view the research-queue GUI, where you can add or remove goals from your research queue. Resources needed for your current goal (if any) will be shown in the slots labeled 'Needed'. Place your resources into the slots labeled 'Input'. Once all resources have been met, the resources will be used and the current goal will begin researching. Research progress will continue for as long as you have the GUI open, but will cease as soon as you close the GUI. You must be present at / have the GUI open on one of your research stations, or use a researcher NPC in order to make research progress.

Once a particular goal has been completed, the goal at the head of the queue will be moved into the 'active goal' position. As long as the required resources are already present in the 'Input' boxes, the goal will start, and research will progress on the new goal. A research goal in the 'active' position may only be cancelled if it has not yet been started (go to the research queue, and remove it from the queue).

Goals that may be learned but are not yet queued will be shown on the right-hand side of the Research Queue GUI. Goals that are currently queued and not yet in-progress will be shown on the left-hand side of the GUI.

Goals may be added to the research queue by pressing the '+' button located to the right of the goal name. Goals may be removed from the research queue by pressing the '-' button located to the right of the goal name. In order for a goal to be added to the queue, any pre-requisite goals must already be learned or queued. If a goal is removed from the queue that has other goals dependent upon it, those goals will also be removed from the queue.

The research station may be optionally configured to use adjacent inventories to withdraw resources for research goals. To enable this functionality, check the checkbox marked 'Use Adjacent Inventory'.

Other notes:

- Most recipes in Ancient Warfare require research before they are craftable. The entire research system may be disabled in the core configuration file – in which case, no research will be required and all Ancient Warfare recipes will be craftable in the normal workbench.
- Research is done only at the Research Station, which may be crafted in the normal workbench or in an Ancient Warfare engineering station.
- Research requires a Research Book, which is also craftable in the normal workbench.
- Research is stored per-player. Any player may contribute to any others' research by obtaining a copy of their research book and using that book in any research table.
- You may use other players research for crafting by obtaining a copy of their research book and using it in your Engineering Station.
- You may only progress on a single research goal at a time. All research stations with a copy of your research book will all contribute towards your selected goal.
- Research goals have both a time and materials component. The needed materials may be viewed on the tooltip of the goal in the research-queue GUI, or in the 'needed' box on the main research progress GUI. Once these materials are present in the 'input' box, the materials will be used and research will automatically start progressing.
- In order to make progress on a research goal you must do one of three things:
 - Leave the research station GUI open.

- Assign an NPC researcher to work at the station.
 - Right click on the research station with a 'Quill' item equipped.
- Multiple Research Stations may be setup to make faster progress towards a single goal. They will each need researcher NPCs assigned to them, or have players using quills / viewing their GUIs.
- The Research Book may be right-clicked after it is assigned to view a GUI with details about each research goal and researchable recipe.

Crafting System



Engineering Station GUI

Crafting in Ancient Warfare 2 has been simplified from the prior versions to use a single crafting block. All Ancient Warfare and vanilla recipes may be crafted at the Engineering Station. The Engineering station may be crafted in a vanilla crafting table. See NEI or similar for the recipe.

Once crafted and placed in the world, the Engineering Station crafting GUI may be accessed via interacting with the block (default: right-click). The Engineering Station has a Research Book slot, and a Research Book must be placed into this slot in order to craft any recipes that have research requirements – the recipes available will depend upon the completed research for the player owning the Research Book. If no Research Book is in the slot the Engineering Station will only be able to craft vanilla recipes or the few Ancient Warfare recipes that do not have research requirements.

To craft using the Engineering Station, lay out your recipe in the crafting grid as normal. Results may be removed from the output slot one at a time, or shift-clicked to craft as many as possible (placed directly into player inventory). The additional slots below the layout grid can be used for extra raw materials storage. The crafting-grid will auto-refill from these components if possible. All slots in the Engineering Station are persistent – unlike the vanilla crafting bench they will not be ejected into the world when the GUI is closed; they will still be there whenever you return, enabling you to grab forgotten materials or extra materials without losing your recipe layout.

Crafting Recipes



NEI Recipe lookup for researched recipe

To view crafting recipes, use NEI or other similar mod. As the recipes may change at any time (and some are user-configurable), they are not listed here.

There is a built-in NEI plugin that should be compatible with recent releases of NEI. It adds recipe lookup and item use search capability for all researched recipes. It does not currently list the required research for viewed recipes (that capability is planned for a future update).

Teams

Ancient Warfare 2.x versions use the vanilla Scoreboard system for team management. Teams may be created/joined/left by using the vanilla scoreboard chat commands. Please see the Minecraft documentation for a list of these commands.

Most entities and tile-entities in Ancient Warfare are owner and team-aware. These entities and tiles store a reference to their owners **name** (not UUID), and use this reference to look up their owners team. Any time a player switches team, **all** of his owned entities (npcs/vehicles/gates) and tiles (crafting blocks, worksites, others) that are team-aware will switch team with him.

Any assigned team colors will be used to display the nameplates for entities owned by other teams (npcs/vehicles) (only applicable if enemy nameplates are enabled in the client-side configuration).

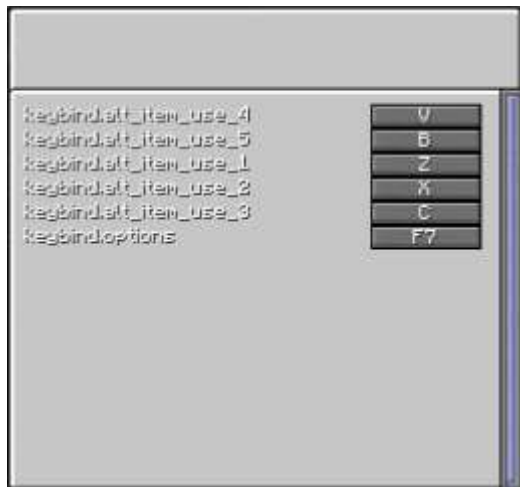
Interaction with many entities and tiles is limited by owner and/or team. You will not be allowed to interact (open GUIs, send commands, etc) with entities or tiles that you do not own or are not on the same team as the owner.

Options Menu and Keybinds



In game options GUI

There is an in-game client-side options GUI that may be accessed via the F7 key (default, re-assignable via MC key-binds GUI). This screen offers options and toggles for all of the in-game adjustable settings. These same settings may be adjusted manually through the configuration files, but the in-game GUI offers a means to modify them while the client is running. The only options here are the purely client-side options that have no effect on server.



In game keybinds GUI

The options screen also has an additional button to access a custom Ancient Warfare keybinds GUI. From this keybind GUI you may modify or reassign any of the keybinds used by Ancient Warfare. These keybinds are handled through a different system than the vanilla keybinds, and can share keys with them. It is the users-responsibility to resolve any keybind conflicts with shared keys and other mods.

Configuration Files

Each module has its own configuration file(s) for module-specific options. The core module also has its own configuration file for global/shared options. Please pay attention to the default

values and comments in the configuration files, as these should explain everything necessary to make adjustments.

More configuration options will be added to these files as development continues. If there is a specific option you would like added, please open up an issue ticket on GitHub including information regarding the option you would like added (see the Features Requests section for more information).

Item Use

Most useable items have been reworked to use a key-driven activation scheme in addition to the existing right-click action. This additional interface is needed due to the complexity of several of the items, as well as for a workaround for item/block interaction conflicts (e.g. cannot right-click activate an item when a block has a right-click action).

The keys used for item interaction can be changed/reassigned in the Options->Keybinds GUI. The default assignments for these keys are 'Z', 'X', 'C', 'V', and 'B'. Any particular item may use one or more of these keybinds; a few of the more complex items from other modules use all of them. Many actions for items that previously used right-click will now use item-key 1 (default 'Z'). Please see the tooltip on specific items to see what key is bound to which action for that item.



Example tooltip for an item with key based interaction

Core Module Items

Backpack



Backpack GUI

The backpack serves as a portable chest. It comes in four sizes – 9 slot, 18 slot, 27 slot, and 36 slot. Larger sizes are more expensive to craft but have no other additional features.

Right-click with a backpack equipped to open the Backpack GUI. From here you can move items into or out of the backpack. The inventory slot that the backpack occupies will be locked and unavailable for manipulation – this is to remove any chances of doing something silly (like putting the backpack inside of itself, thus deleting it when you close the GUI). To close the GUI, press ‘esc’ or ‘e’ (or whatever your inventory keybind is).

Hammer



Hammer tooltip

The Hammer item has three functions: weapon, block rotation tool, and a tool for allowing players to work at Automation Module Worksites. To use it as a weapon simply attack an entity with it; it should have damage equivalent to a sword of the same material, but lacks a block ability. To use it as a block-rotator or work-tool, right click on the target block. To switch between ‘rotate’ and ‘work’ modes press item-interaction key 1 (default ‘Z’). The Hammer is also used as a class equipment item for some NPCs in the NPC Module.

Quill

The Quill item may be used as a mid-grade weapon (slightly less than same-material sword), or as a tool to allow players to ‘work’ at a research station (similar to working at a worksite with a Hammer). To manually add research to a research station simply right-click on the block – one seconds worth of research time should be added to the progress of the currently researching goal. The Quill is also used as equipment for some NPCs in the NPC Module.

Research Book



Research Book GUI

The Research Book serves to denote what player’s research progress should be used in Research Stations, Engineering Stations (and other AW crafting stations). Exact research progress is not stored in the Research Book – losing your Research Book or having it destroyed will not result in losing any research progress.

After a Research Book is first crafted it must be assigned to a player to be of any use. Press the item interaction key 1 (default ‘Z’) to assign a new research book to the player using it. After it has been assigned to a player, the Research Book can be used to view the Research goal tree as well as any recipes that are unlocked from specific research. Press the item interaction key 1 (default ‘Z’) to open the Research view GUI.

Once a Research Book has been assigned to a player it may not be re-assigned. You may give a copy of your Research Book to other players to allow them to use your Research progress or allow them to contribute progress towards your current Research Goal.

Research Notes

Research Notes items. These may be right clicked to either learn the denoted research directly, or add progress towards your current research goal (depending on if you already know the research from the note). These will be added to the dungeon-chest loot generation system in the near future, with configurable options for rarity/enable/disable. They are currently only available via the creative menu.

Core Module Blocks

Engineering Station

The Engineering Station is the main crafting block for Ancient Warfare. To interact/open the crafting GUI simply right-click on the block. See the Crafting System section for more details.

Research Station

The Research Station is necessary for progressing on the Ancient Warfare Research tree. To interact/open the Research GUI simply right-click on the block. See the Research System section for more details on its exact use.

Bug Reports / Issues

Please report any bugs or issues on GitHub. The issue tracker is located at: <https://github.com/shadowmage45/AncientWarfare2/issues>. Issues reported in any other way will be ignored. Please browse the existing tickets to ensure it is not a duplicate. If an issue exists that covers your problem feel free to add any additional info that you may have.

If your issue is not a duplicate, feel free to open up a new ticket. Please describe the problem in as much detail as possible. If it is crash related, include the crash report. If it is a repeatable issue, describe the steps necessary to duplicate it. All of this information will come in handy tracking down and solving the issue – the more information you provide, the quicker the issue can be found and dealt with.

Feature Requests

Is there a new feature you would like to see added? Think the balance on something could use adjusting? Want more options for configurability?

The steps for feature requests are as simple as opening an issue ticket on GitHub. Navigate to <https://github.com/shadowmage45/AncientWarfare2/issues>, click on the 'New issue' button, and when you open your ticket flag it as an 'enhancement' or 'balance' issue. Fill in as much information as possible regarding the feature you would like. Screenshots, links, diagrams, etc. are welcome (and encouraged) for explaining your idea.

Contributions

Ancient Warfare is an open source project. Contributions to the code are welcome. More specific details can be found at the source repository, located at: <https://github.com/shadowmage45/AncientWarfare2>.

Section II – Automation Module

General

The Ancient Warfare Automation Module adds many new blocks to the game with the intent of adding tools for automation of resource gathering, processing, and crafting. It also adds a fully BuildCraft-MJ compatible power-framework to power the automation blocks. A few other utility oriented blocks are also included.

Many of the features of the Automation Module are intended to be used in combination with the NPC Modules ‘Worker’ type NPCs – these NPCs provide the energy for operation of many of the automation machine blocks. Alternative means of power-generation are available in the Automation Module allowing it to be used as a stand-alone/without the NPC module if wanted.

Worksites

Worksites form the heart of the Ancient Warfare automation system. A Worksite is a block that requires energy input in order to process its work. Many different types of worksites and work exist. Each worksite is devoted to a single task or type of work. Many worksites have work-bounds that denote the area over which they have control / will work in.

In order to place a worksite, simply right-click with the worksite block in-hand. The worksite will be placed with default bounds if applicable. To adjust the work-bounds, open the GUI (right-click) and hit the ‘Bounds’ button at the bottom. Many of the worksites with bounds also have configurable target/work blocks; these blocks may be set in the ‘Bounds’ GUI as well; red=work target, black=not a work target. For non-configurable worksites, the blocks will always be black.

Most worksites can have various properties upgraded through the use of ‘Worksite Upgrade’ items. Please see the Worksite Upgrades section for more details.

Most worksites have configurable block side/inventory assignment. Open the main GUI and press the ‘Inv’ button to adjust the block side/inventory mapping. Each side of the block may be mapped to a single internal inventory area (or none). Multiple sides on the block may be mapped to the same inventory area.

Players may manually ‘work’ at a worksite by right-clicking on the control block with a Hammer equipped.

Worksites may be ‘turned off’/disabled by applying a redstone signal to the control block.

The following types of worksites are currently available:

Crop Farm

The Crop Farm plants and harvests Wheat, Carrots, Potatoes, Melons and Pumpkins. The blocks to be tilled / planted / harvested may be adjusted in the ‘Bounds’ adjustment GUI. Harvested resources will be placed into the upper inventory area. Seeds to be planted should be inserted into the middle inventory area. The lower area is reserved for Bonemeal, which will be used to speed the growth of any crops after tilling/planting has been done. Can use bounds, enchanted tools, and quality tools upgrades.

Tree Farm

The Tree Farm plants saplings and harvests logs from grown trees. The blocks to be planted and harvested may be adjusted in the 'Bounds' adjustment GUI. Harvested resources will be placed into the upper inventory area. Saplings to be planted should be inserted into the middle inventory area. The lower area is reserved for Bonemeal, which will be used to speed the growth of any saplings after planting has been done. Can use bounds, enchanted tools, and quality tools upgrades.

Mushroom Farm

The Mushroom Farm plants brown and red mushrooms as well as Netherstalk. The blocks to be planted may be adjusted in the 'Bounds' adjustment GUI (all non-planting blocks will be 'harvest' blocks). Harvested resources will be placed into the upper inventory area. Mushrooms/Netherstalk to be planted should be inserted into the middle inventory area. Mushrooms and Netherstalk both have special requirements that must be met for their planting and growth – low light for all and soul-sand necessary for Netherstalk. Meeting these requirements is the responsibility of the player/user. Can use bounds, enchanted tools, and quality tools upgrades.

Reed/Cactus/Cocoa Farm

The Reed Farm plants and harvests the 'odd' crops from vanilla Minecraft: reeds, cactus, and cocoa beans. The blocks to be tilled / planted / harvested may be adjusted in the 'Bounds' adjustment GUI. Harvested resources will be placed into the upper inventory area. Items to be planted should be inserted into the middle inventory area. Any special requirements for the crops growth must still be met – jungle logs are needed for cocoa beans, sand is needed for cactus, and reed requires water nearby with either grass/dirt/sand to grow on. Can use bounds, enchanted tools, and quality tools upgrades.

Animal Farm

The Animal Farm allows for the automated feeding and harvesting of vanilla livestock. The maximum number of allowed adult animals per type is configurable via the 'Adv' button in the main GUI. Harvested items are placed into the top inventory area. Feed items for the animals may be placed into the lower inventory area. Animals will only be fed if there are two adult and breed-ready animals available. Can use bounds, enchanted tools, and quality tools upgrades.

Fish Farm

The Fish Farm provides an automated means for catching fish (all vanilla types) as well as ink. More water in and below the bounds of the fish farm will result in faster production. Can enable/disable the catching of fish and/or ink through the 'Adv' GUI. Can use bounds, enchanted tools, and quality tools upgrades.

Quarry

The Quarry uses input energy to harvest blocks. By default the Quarry can harvest any block harvestable with a stone pickaxe. Upgrades are available to harvest harder blocks. The upper inventory area is where harvested resources will be placed. The Quarry will remove water source blocks, but will not harvest below lava. Can use bounds, enchanted tools, and quality tools upgrades.

Warehouse

The Warehouse is an upgradeable mass-storage site. It requires a Warehouse Control block to set up the site, as well as storage and interface blocks for actual operations. The Warehouse can use bounds, enchanted tools, and quality tools upgrades. See the Warehouse section for more information on setup and use.

Auto Crafting Station

The Auto Crafting Station is a worksite devoted to the automation of crafting. Lay out your recipe in the layout matrix. Provide materials in the raw materials area. For every work unit of power input, one item will be crafted and put into the output area. See the Auto Crafting section for more information on setup and use.

Hand-Cranked Generator

The Hand-Cranked Generator provides a means of turning NPC and player based ‘work’ into a form of energy useable by worksites and convertible into BuildCraft-MJ. Its main purpose is to allow an interface between NPC workers and BuildCraft – can use workers to power any BuildCraft machines with the use of a Hand-Cranked Generator and conversion blocks. It also allows a late-game means for players to consolidate and optimize their energy use and production for worksites. See the Torque Power System section for more details on setup and use.

Worksite Upgrades

Worksite Upgrades are items that may be applied to a worksite to upgrade or alter its functionality. To apply an upgrade to a worksite right click the item while targeting the block – if it can be used it will be and the item will be removed from your inventory. If the applied upgrade overwrites an existing one, the existing upgrade item will be ejected into the world. Not all upgrades are applicable to all worksites.

The following upgrade types are available:

Bounds Upgrade Medium

Increases the work bounds maximum width/length to 9 blocks for most bounded worksites. Is overridden by the Large Bounds Upgrade. Cannot be applied to Quarries (use the Quarry Bounds Upgrade items).

Bounds Upgrade Large

Increases the work bounds maximum width/length to 16 blocks for most bounded worksites. Overwrites the Medium Bounds Upgrade. Cannot be applied to Quarries (use the Quarry Bounds Upgrade items).

Bounds Upgrade Quarry Medium

Increases the work bounds maximum for a Quarry to 32 blocks. Is overwritten by the Large Quarry Bounds Upgrade. Can only be applied to Quarries (use the normal bounds upgrades for other Worksites).

Bounds Upgrade Quarry Large

Increases the work bounds maximum for a Quarry to 32 blocks. Is overwrites the Medium Quarry Bounds Upgrade. Can only be applied to Quarries. Can only be applied to Quarries (use the normal bounds upgrades for other Worksites).

Enchanted Tools 1

Adds the equivalent of 'Looting I' or 'Fortune I' for generating extra loot when harvesting block or animal drops. Also increases Worksite efficiency by a small amount. Is overwritten by Enchanted Tools 2.

Enchanted Tools 2

Adds the equivalent of 'Looting II' or 'Fortune II' for generating extra loot when harvesting block or animal drops. Also increases Worksite efficiency by a moderate amount. Overwrites Enchanted Tools 1.

Quality Tools 1

Increases Worksite efficiency by a small amount. Also provides the Quarry with the ability to harvest at an Iron pickaxe level. Is overwritten by Quality Tools 2 and Quality Tools 3 Upgrades.

Quality Tools 2

Increases Worksite efficiency by a moderate amount. Also provides the Quarry with the ability to harvest at a Diamond pickaxe level. Overwrites Quality Tools 1 Upgrade. Is overwritten by Quality Tools 3 Upgrade.

Quality Tools 3

Increases Worksite efficiency by a large amount. Also provides the Quarry with the ability to harvest any breakable block. Overwrites Quality Tools 1 and Quality Tools 2 Upgrades.

Auto Crafting

INSERT SCREENSHOT OF AUTO CRAFTING STATION GUI

The Auto Crafting Station is a Worksite dedicated to automating the crafting of items. It uses a research book (like the Engineering Station) to determine what researched recipes may be crafted. Like other Worksites, the Auto Crafting Station requires energy input to function.

The Auto Crafting Station has three inventory areas – raw goods storage, recipe layout, and crafting output storage. Block-side access for each of these inventories can be configured from the 'Inventory' button.

To use the Auto Crafting Station begin by laying out your intended recipe in the recipe grid. Items in the layout grid will not be used up while crafting, only items from the raw-goods inventory area will be used when crafting. After your recipe is laid out as intended, the item to be produced should show in the output area. Place any resources needed for crafting the recipe into the raw goods area.

To process the crafting of items in the Auto Crafting Station either supply a power input from workers (work type: Crafting), torque conduits, 'using' a Hammer on it, or by pressing the 'Craft' button in the inventory GUI. For every press of the button or 50 energy units input a single output item will be crafted. Any items crafted will be placed into the crafting output

inventory area. If the output area cannot hold the item to be crafted, no action will be taken (and no energy used).

Warehouse

The Warehouse is meant as an upgradeable self-sorting and auto-organizing mass item storage area. It has work bounds like other Worksites, but is also a Multi-block structure in that it requires other blocks for its functionality. Like other Worksites, the Warehouse requires energy input to function. This energy may come from torque conduits, workers, or a player using a Hammer. The Warehouse comprises four different types of blocks – the Warehouse Control Block, Warehouse Storage blocks, Warehouse Interface blocks, and Warehouse Stock Viewer blocks. Additionally there is a Warehouse Crafting Station to allow a Player to use items directly from the warehouse for crafting.

Warehouse Control Block

INSERT SCREENSHOT OF WAREHOUSE CONTROL GUI

The main block of the Warehouse is the Warehouse Control Block. This block manages the bounds of the warehouse and is the target for workers and energy input. It does not by itself offer any storage capability – storage capacity is added by placing Warehouse Storage blocks within the managed bounds. What it does offer is a way to view all stored items, filter view by text input, and manually input and withdraw from the managed storage blocks.

By default the Warehouse manages an area of 5x5x4 (width, length, height) blocks. This area can be expanded through the use of the Medium and Large Bounds Upgrades, which will increase the bounds to 9 and 16 blocks respectively. The bounds to be managed by be adjusted by pressing the ‘Bounds’ button in the main GUI.

The Warehouse Control Block does not offer any externally accessible inventories, all automated item input/extraction must be done through Warehouse Interface blocks. The Warehouse Control Block provides coordination amongst the many types of warehouse block and facilitates moving items from one block to another within the warehouse (from storage to interface, and from interface to storage).

The Warehouse Control Block requires constant energy input in order to move items between blocks. This energy may come from torque conduits, workers, or a player using a Hammer. Energy is only consumed when items are moved, and is the same regardless of stack size or contents.

The warehouse controller block may itself be interacted with to display the warehouse GUI. This GUI displays all items stored in the storage blocks controlled by this warehouse controller. Multiple sort modes are available – by name, by quantity, or by user-input text string.

A search input box is available. To use it, set the sort type to ‘Input’. Items with names matching the input will be filtered to the top. Partial matches below full matches. There is a toggle to sort by ascending or descending – default is descending (a-z, 0-9).

Click on any item in the warehouse GUI to withdraw that item. Shift-click to move it directly into your inventory. Items requested in this manner are withdrawn directly from storage blocks and workers are not needed to process the request.

Drop any item into the warehouse item-view panel to manually deposit that item into the warehouse. Items deposited in this manner are moved directly into storage blocks and do not need workers to process the request.

Warehouse Storage Blocks

INSERT SCREENSHOT OF WAREHOUSE STORAGE GUI

Warehouse Storage blocks provide a means to expand the capacity of the Warehouse. Every additional Storage block placed within the managed bounds will increase the total capacity of the warehouse by a set amount; higher grades of Storage block add more capacity than lower grades. Items are actually stored in these Storage blocks. If you break a Storage block all items it contains will be dropped in the world and no longer available in the Warehouse. Players may manually add and remove items from the Storage blocks, but their main use is for the Warehouse Control Block to manage their stored items

Warehouse Storage blocks may be interacted with to view or manipulate contents or to set content filters. Once a filter is set, only items matching that filter will be placed into that storage block; any existing items will be left in place. An empty filter list denotes that any item may be stored there. An empty filter matches no items (and thus a storage block with a single empty filter will not store any items). These blocks do not provide any externally accessible inventories, all automated interaction must go through the Warehouse Interface blocks.

Warehouse Interface Blocks

INSERT SCREENSHOT OF WAREHOUSE INTERFACE GUI

Warehouse Interface blocks provide the means to access the items in the Warehouse through external and automated means. These blocks provide an externally accessible inventory that may be directly manipulated by NPC Couriers, vanilla hoppers, BuildCraft pipes, or any other mod-added means of manipulating block-based inventories. The Interface block serves as both the input and output for the Warehouse, and every Interface block may be used as input, output, or both.

The Warehouse Interface block can be interacted with to open up a GUI to control its filter list. The filter list determines what items will be automatically placed into the interface, and which items should be automatically removed. Any items in the filter list will be automatically placed into the Interface block at regular intervals by the Control Block, up to the quantity specified in the filter (as long as the Control block is powered). Any items not in the filter list will be automatically removed from the Interface block at regular intervals by the Control Block (again, as long as it is powered).

Warehouse Crafting Station

INSERT SCREENSHOT OF WAREHOUSE CRAFTING GUI

The Warehouse Crafting Station must be placed on top of a Warehouse Control block (not within the bounds), and works with materials from a single Warehouse. Like other crafting stations, the recipe may be laid out in the recipe grid. Results may be pulled from the result slot. Any resources needed from crafting will be pulled from the Warehouse's Storage blocks.

Mailbox

INSERT SCREENSHOT OF MAILBOX GUI

Mailboxes serve as a late to end-game item-teleportation system. Item travel time is determined by distance (20 ticks/block, configurable/60 seconds cross dimension, configurable). Mailboxes can be flagged for either the 'public' network, or a 'private' network for each player. Mailboxes do not require any power input or interaction other than adding items to send and remove items received.

Public mailboxes can be interacted with by anyone regardless of team or the owner of the mailbox. Public mailboxes can send to, and receive from, any other public mailbox. Everyone can see the full list of public mailbox names, and add/remove names from this list.

Private mailboxes can only be interacted with by their owner. Private mailboxes can only send to and receive from other private mailboxes of the same owner. Only the owner of a private network can add or remove mailbox names or assign a box a particular private name.

Chunk Loaders

INSERT SCREENSHOT OF DELUXE CHUNKLOADER GUI

Chunkloaders force Minecraft to keep specific world chunks loaded and ticking. This removes the requirement of a player being nearby for the world to be active, but only for those chunks under the effect of the Chunkloader. This allows for worksites to continue functioning, NPCs to continue doing their thing, and overall for the game to run like normal for effected chunks.

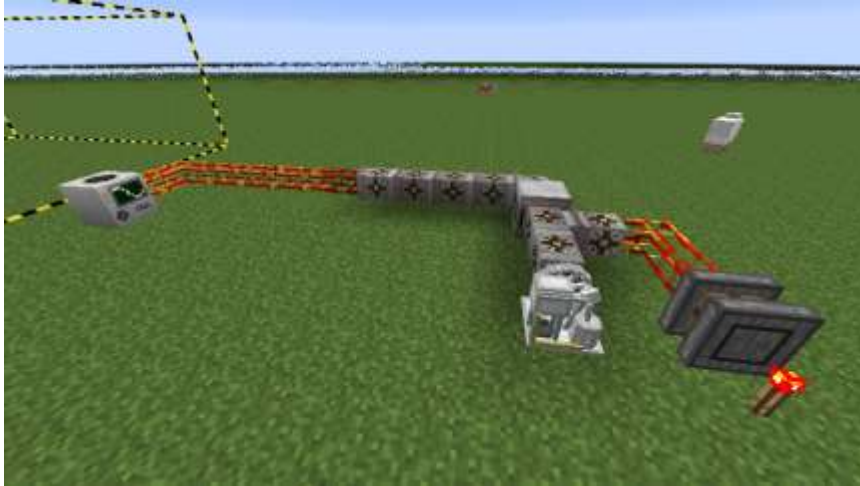
The 'Simple Chunk Loader' loads a 3x3 chunk area centered on the chunk it is placed in. The 'Deluxe Chunk Loader' has a GUI where you may configure which chunks around it are to be loaded (the top of the GUI denotes north, the chunkloader is in the center). It may load any chunks in a 5x5 area, up to 25 total chunks.

Torque Power System

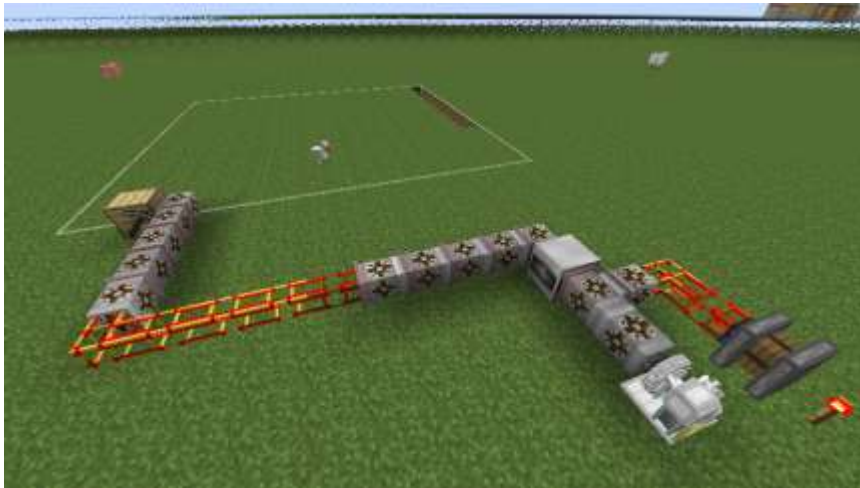
The Torque power system is meant as a stand-alone equivalent to the BuildCraft-MJ (6.x) system, to allow Ancient Warfare to have full automation capabilities without relying on other mods, and to give players a higher-tier of automation related tech to work towards in the Ancient Warfare research system. The Torque power system also provides a means for power-generation for the Automation Module in cases where the NPC module is not present or otherwise disabled.

The Torque power system includes blocks for power generation, transport, and storage. All blocks are directional – they will only accept or emit power from specific block sides. All non-machine blocks also have power loss; 1% of stored energy per second base, adjusted by block tier. Most block types have multiple tiers available; higher tiers have larger transfer and storage amounts, and lower power loss, but also require more research to enable crafting and higher resource use for each block crafted.

Power is converted at a 1:1 ratio between BuildCraft-MJ. MJ may be converted directly into Torque by input into any Torque Conduit, Distributor, or Flywheel block from BuildCraft energy pipes. To convert Torque into MJ, use a BuildCraft wooden power pipe to extract energy from any Conduit, Distributor or Flywheel.



Torque Power/BuildCraft interaction, powering a BC Quarry



Torque Conduits powering an AW Quarry

The Torque power system comprises many different blocks, these are:

Torque Conduits

Torque Conduits serve as the main method of transferring Torque power from the point of generation to the point of use (or storage). Each Conduit block comprises a set of torque-shafts, multiplexing gear set, and high-efficiency clutch mechanisms to facilitate the transfer of energy between blocks.

Torque Conduits come in three progressively better tiers, Light, Medium, and Heavy. Lower tiers have lower energy transfer and storage ability and higher loss. Higher tiers have higher transfer and storage ability and lower power loss.

Torque Conduits have up to five inputs, and a single output (denoted by the pink/flanged side of the block). By default the output is oriented to face the side of the block clicked on when placing the Conduit. You may use a Hammer or other block-rotation tool to re-orient an already placed Conduit. Conduits will automatically connect to adjacent Conduits or other connectable Torque tiles.

Torque Distributors

Torque Distributors are the multi-output version of conduits. They have a single input and up to five outputs. Output sides are colored pink. All other statistics and uses are the same as Conduits. You may use a Hammer or other block-rotation tool to re-orient an already placed Distributor.

Torque Flywheels

Flywheels serve as a temporary energy-storage mechanism. As they do incur internal power-loss, long term storage is not recommended, but they do work extremely well as a power-buffer in between your generation and consumer areas. Lower tiers have lower energy transfer and storage ability and higher loss. Higher tiers have higher transfer and storage ability and lower power loss. Flywheels have up to 5 inputs, and a single output (denoted by the pink colored side). Flywheels will auto-balance energy between each-other when stacked vertically, so capacity can easily be expanded by stacking multiple flywheels without any other conduits needed.

Hand Cranked Generator

The Hand Cranked Generator serves as a means to generate Torque power from player and NPC input. NPCs will see it as a Worksite (Type: Generic), a valid target for work by any worker NPC. Players may use it to generate energy by right-click interacting with a Hammer equipped.

Sterling Generator

The Sterling Generator is the equivalent of the BuildCraft Sterling / Stone engine. It burns flammable fuels to generate one energy unit per tick as long as it is fed fuel. Anything that may be burned in a furnace should be valid fuel – energy output is a constant 1/tick regardless of fuel type. Burn duration is determined by vanilla burn time / the mod registering the fuel source.

Waterwheel Generator

The Waterwheel Generator uses the flow of water to output a constant, but small, amount of Torque energy. Its exact output depends upon the layout and setup of the area – higher vertical drops and/or higher flow rates result in higher output. Maximum output from an ideal setup is 0.15 energy / tick. Waterwheel generators are meant to be used as a slow-but-steady power input.

Automation Module Items

Worksite Upgrades

Please see the section on Worksite Upgrades for more information on these items.

Automation Module Blocks

Worksites (Farms, Quarry)

See the Worksites section for a description of each of these blocks functions.

Auto Crafting Station

See the Auto Crafting section for a description of this blocks functions.

Mailbox

See the Mailbox section for a description of this blocks functions.

Basic Chunkloader

See the Chunk Loaders section for a description of this blocks functions.

Deluxe Chunkloader

See the Chunk Loaders section for a description of this blocks functions.

Warehouse (Control, Storage, Interface, Stock Viewer, Crafting)

See the Warehouse section for a description of each of these blocks functions.

Torque Tiles (Conduits, Flywheel, Distributor, Generators)

See the Torque Power System section for a description of each of these blocks functions.

Section III – NPC Module

General

The NPC Module adds several types of player-owned and commanded NPCs. It also includes a computer-controlled faction oriented NPC system for use in map creation and world generation through the Structure Module.

Player-Owned NPCs can be recruited for combat, worker, and utility roles. Worker NPCs are intended to be used with the Automation module, and serve little function on their own. Worker NPCs are available in several configurable roles – farmer, lumberjack, miner, researcher, and craftsman. Combat NPCs are available in several configurable roles – swordsman, archer, medic, and engineer. Utility NPCs are also available in several varieties – Priest, Courier, Bard, and Trader (Bard and Trader might not be available on initial release).

Faction controlled NPCs are available in several varieties (both combat and non-combat) for up to eight different factions (five pre-configured, three user-configurable). Many aspects of the Faction system are configurable, including starting faction standing, standing gain/loss for specific inter/actions, and even how the Factions view one another (computer Faction vs. computer Faction warfare).

All NPC types maintain experience and level stats. Player-Owned NPC types track level and experience separately per available role. Higher levels result in higher damage and work output and higher maximum health. Experience is gained by doing whatever action is appropriate for the NPC; workers gain experience by working, soldiers gain experience by attacking and killing enemies, and utility NPCs gain experience by performing their specific roles.

Player-Owned NPC Crafting (recruiting)

NPC spawning items for the player-owned NPC types may be crafted at the Engineering Station. Each spawning item requires a food bundle (also crafted at the Engineering Station) in addition to some gold for their initial pay, and some equipment to be used in their training. Each spawning item will create one NPC of the specified type. For exact recipes, please use NEI or similar.

Player-Owned NPC Interaction

INSERT SCREENSHOT OF NPC INVENTORY GUI

To access a Player-Owned NPC's inventory, right click/interact with them – this should open up the NPC Inventory GUI. From here you can adjust the NPC's equipment (which may change their class), change the name displayed on their nameplate, and give the NPC upkeep orders and/or other orders items. Players in creative mode have additional controls available to them – see the Creative Mode Interaction section for more information.

Workers and Combat NPCs use the item equipped in their main hand to determine their current class or role. Changing the item equipped will immediately change their role, including any necessary changes in AI. Utility NPCs only have a single role, but must still be equipped properly in order to function. All Player-Owned NPCs may be given armor, which contributes to damage reduction through vanilla MC methods.

An NPC's name may be changed by editing the name displayed in the text box in the Inventory/interaction GUI. Changes will immediately update the displayed name.

NPCs may be repacked into a spawning item by pressing the ‘Repack’ button in the Inventory/interaction GUI. When repacked the NPC will retain all inventory, experience, and levels.

Player-Owned NPC Horse Interaction

All player-owned NPCs may be ordered to mount and ride a horse while performing their normal duties. This increases the speed at which they move and can give them an advantage in combat against non-mounted enemies. An NPC riding a horse will need special accommodation for his increased entity-size – larger doorways and walkways will be necessary for optimal use, and paths will need their doors removed as mounted NPCs cannot activate doors.

An NPC may be commanded to ride a horse via the command baton by selecting the NPC and issuing a move/guard/mount command (default C key) while targeting the horse to be mounted. The horse must be tamed and saddled (the saddle will disappear while the NPC is riding, but is still present).

To dismount an NPC that is riding a horse, select the NPC with the command baton and issue another move/guard/mount command while targeting the horse he is riding. The NPC should dismount and return to his normal duties.

Player-Owned NPC Upkeep

All Player-Owned NPCs require upkeep in the form of food. If they are not fed, they will cease doing their duties; workers and utility NPCs will wander about, and Combat NPCs will only attack in self-defense. They will also cease to automatically heal as long as they are hungry. If they have an assigned upkeep point, they will wait near that point until fed.

The specific food values withdrawn at every upkeep period is configurable through the Upkeep Orders item. If no Upkeep Orders are equipped, the NPC will attempt to withdraw enough food for five minutes (real-time).

The specific food value granted by an item and which items are considered food are completely configurable through the “AncientWarfareNpcFood.cfg” configuration file. The values specified for food are the amount of ticks each item will feed the NPC for.

NPCs without an Upkeep Orders item equipped will attempt to withdraw their upkeep from the nearest available Town Hall block. A player may also manually specify the upkeep location for an NPC by using the Command Baton, but this does not allow for setting how much food will be withdrawn at every upkeep cycle.

Player-Owned NPC Teams

All Player-Owned NPCs take team status directly from their owner. If their owner changes team, they will change team at the same time. NPCs may only be commanded by their owner or another player on the same team. Neutral NPCs may only be commanded by their owner.

Players not on a team are considered ‘Neutral’. NPCs from players on teams will not attack neutral NPCs, nor will neutral NPCs attack any other Player-Owned NPC. Neutral NPCs will still respond to Faction NPCs as appropriate for their faction standing (see the Player-Owned NPC Faction Standing section for more details).

Player-Owned NPC Faction Standing

All Player-Owned NPCs derive their faction standing (and view of Faction owned NPCs) from their owners faction standing. If a faction is hostile towards an NPC’s owner, that NPC

will also be hostile to that faction. A player faction standing can be directly influenced by his NPCs; if they kill a faction owned NPC, their owner's faction standing will be negatively affected.

Player-Owned Worker NPC Types

When first recruited, Worker NPCs are of a generic 'Worker' type and must be properly equipped before they can begin their career. The role the worker takes on is dependent upon the type of equipment given to them – you must equip the worker appropriately for his new job.

The material quality of the equipment will contribute to the workers effectiveness and work output. A workers level will also contribute to his effectiveness at his current task. Worker levels are tracked independently per role; changing role will result in the worker using his level for the new role for efficiency calculations, and any experience gained will contribute to his level for that role only.

NPC Workers will automatically seek the nearest active worksite that has work to begin working at. If no worksites have work to be done, they will begin to wander around. Automatic selection of worksite can be overridden by placing a properly configured 'Work Order' item in the workers 'Orders' slot.

Workers will automatically return to their home point at night or whenever it is raining. The home point is set when the NPC is initially spawned, but may also be changed through the interaction GUI or with the Command Baton. To disable the 'go home at night' AI, remove/clear/un-assign the NPCs home point.

If a Worker NPC spots a hostile entity they will broadcast an alert and begin moving towards the nearest Town Hall while attempting to evade the enemy. If no Town Hall is near, they will move towards their home point while attempting evasion. If no Town Hall is present, or home point set, they will continue working like normal. Other nearby NPCs may respond to this broadcast in different manners – other nearby Workers and Utility NPCs will begin to flee as well, while nearby Combat NPCs may move to attack the enemy.

The types of Worker NPC, and necessary equipment, are:

Worker

The generic Worker NPC. When equipped with no item or any item not activating any other role, the Worker will revert to this role. The only thing he is good for is eating all of your food. Don't let these guys mill about, give them some proper equipment and send them to work!

Farmer

The Farmer works at the Crop Farm, Reed Farm, Mushroom Farm, Animal Farm, and Fish Farm worksites. Required equipment is a Hoe, of any material level, in the main-hand slot. Offhand and armor may be configured as desired.

Miner

The Miner works at the Quarry and Construction Site worksites. Required equipment is a pickaxe, of any material level, in the main-hand slot. Offhand and armor may be configured as desired. Pickaxe material level does not determine harvestable blocks at a Quarry – that is determined by the Quarry's upgrade level.

Lumberjack

The Lumberjack works at the Tree Farm worksite. Required equipment is an axe, of any material level, in the main-hand slot. Offhand and armor may be configured as desired.

Researcher

The Researcher works at Research Stations, to enable continual research progress without player interaction. Required equipment is a Quill, of any material level, in the main-hand slot. Offhand and armor may be configured as desired.

Craftsman

The Craftsman works at the Auto Crafting Station and Warehouse worksites. Required equipment is a Hammer, of any material level, in the main-hand slot. Offhand and armor may be configured as desired.

Player-Owned Combat NPC Types

Player-Owned Combat NPCs, like Workers, are unskilled when first recruited. You must equip them properly for whatever their intended job will be. Damage output is determined by NPC level and the material level of the items equipped. Like workers, Combat NPCs track experience and level per-role.

If a Combat NPC spots a hostile entity they will broadcast an alert and begin moving towards attack distance from that enemy. Other nearby NPCs may respond to this broadcast in different manners –nearby Workers and Utility NPCs will begin to flee, while other nearby Combat NPCs may move to attack the enemy.

If a Combat NPC has a home point set he will attempt to stay within a set distance of this home point even when pursuing enemies. If he strays too far, he will abandon his current task/target and begin moving back within a set distance from his home point.

Combat NPCs may be assigned patrol routes by equipping them with a properly setup Combat Orders item in their Orders slot.

The types of Combat NPC, and necessary equipment, are:

Combat

The basic Combat NPC is the unskilled recruit. He has a very basic combat AI and only does a single damage per hit. Any time a combat NPC has no main-hand item, or other unrecognized item, he will revert to this role.

Soldier

Equipping a Combat NPC with a Sword (any material level) will turn him into a Soldier. The soldier has no specific special abilities. His damage output is determined by the material level of the sword equipped – diamond weapons do more damage than wood. Offhand and armor may be configured as desired.

Archer

Equipping a Combat NPC with a vanilla bow will assign him the role of Archer. An Archer's sole special ability is ranged attacks. They have the same range for attacks as a vanilla Skeleton. Offhand and armor may be configured as desired.

Medic

Medics will attempt to heal nearby same-team injured units, including Players. A Combat NPC may be assigned the Medic role by equipping an Axe in his main-hand. Damage output is determined by material level of the axe equipped. Offhand and armor may be configured as desired.

Engineer

Engineers will pilot an assigned Siege Engine. A Combat NPC can be assigned the role of engineer by equipping him with a Hammer in his main-hand. Offhand and armor may be configured as desired. As the Vehicles Module is not-yet-implemented, the Engineer currently serves no purpose.

Commander

Commanders boost the damage and armor of nearby same-teamed NPCs. The Commander role may be assigned to a Combat NPC by equipping him with a Command Baton in his main-hand. Damage output is determined by material level of equipped Baton. Offhand and armor may be configured as desired.

Player-Owned Utility NPC Types

Several types of utility NPC are available to aid the Player in a several types of tasks. Each utility NPC is of a set type, once recruited/spawned their role may not be changed. Many still require specific equipment to function properly, see the details below for more info.

Like Worker NPCs, Utility NPCs will return to their home point whenever it is night time or raining. This function may be disabled by clearing/removing/un-assigning the NPCs home point.

The types of utility NPCs available are:

Courier

The Courier is the master of logistics. He is skilled at moving items from one place to another and keeping things stocked up and flowing. The Courier must be equipped with a Backpack in his main-hand for inventory space. The type of Backpack determines how much room the Courier has for storing items. Items that the Courier is moving are stored in the backpack; you may remove it at any time and view or manipulate the contents.

A Courier must also be equipped with a Routing Order in his orders slot. The Routing Order specifies what blocks the courier will be transferring items to and from, and what items he will be moving at each stop. Please see the NPC Orders section for more details regarding the Routing Order setup and functioning.

Priest

The Priest NPC can make combat operations less risky, or at least less costly. His only function is to resurrect slain NPCs. In order to be eligible for resurrection the slain NPC must have had a Town Hall assigned, died within range of that Town Hall, and meet other (still in development) criteria.

Currently there is no cost associated with the resurrection process, but this will be changed in the near future – each resurrection will require a material and time cost. It should be costly, but still less expensive than recruiting a new NPC and training him up.

Resurrected NPCs return unequipped – their equipment was dropped when they were slain, and must be manually retrieved and/or replaced.

Bard

The Bard is a ‘flavor’ NPC – he has no real use aside from playing music. The music to be played, play frequency, and volume may all be configured from his advanced controls GUI. These controls may be accessed by pressing the ‘Advanced Controls’ button in his inventory/interaction GUI.

The bard is currently disabled / unavailable while a few issues regarding adding new sounds are sorted and simplified.

Trader

The trader is a player-configurable mobile bartering station. The trader must be equipped with a Backpack in his main-hand for item storage. Any items to be traded, and proceeds from trades, are stored in this backpack. A Trader must also be equipped with a Trade Orders item in his Orders slot. Through this you may assign him a withdraw and deposit point for his traded goods, assign the specific trades he will have available, the route he should take for trading, and how long he should linger at each stop on his route.

The Trader is currently disabled / unavailable until the trading system is finished being developed.

Town Hall

The Town Hall block functions as an auto-assignable upkeep point for its owners NPCs. NPCs in range will automatically select the closest Town Hall as their upkeep point if no Upkeep Orders are present. The Town Hall has a modest sized inventory for storing food for NPC upkeep.

The Town Hall additionally serves as a death tracker for any NPCs that died nearby. Players may view this list by pressing the ‘Death List’ button in the Town Hall GUI. The list may be cleared out manually by pressing the ‘Clear List’ button in the death list GUI. Priests use this death list to track potential resurrection targets, so do not clear the list if you want to resurrect any of the NPCs on it.

Orders and Routes Items

Orders items offer a means to issue advanced persistent orders to an NPC. All NPCs have two orders slots; the top slot is the Upkeep Orders slot, and the bottom slot is the role-specific orders slot.

Each Orders item functions slightly differently, but all share a common interaction scheme: Right click to open the GUI and view/edit the orders. Press the item-interaction key 1 (default ‘Z’) to add a new target to the orders.

While holding an Orders item the target blocks denoted by the orders will be highlighted, and lines rendered between them to denote the route/ordering.

The types of Orders items, and their functions, are:

Upkeep Orders

The Upkeep Order item denotes the site from which a Player-Owned NPC should withdraw his upkeep, and offers the ability to set the upkeep period (how often the NPC should go back to eat). Press ‘Z’ while holding the Order to assign the target block. Right click to open

the GUI to alter the upkeep period. Altering the upkeep period directly effects how much food is withdrawn on each visit. If not enough food is available nothing will be withdrawn, and the NPC will wait at the upkeep point for it to be restocked.

Combat Orders

Combat Orders offer a means to assign a patrol route to Combat NPCs. The patrol can comprise any number of stops, but they must each be within path-finding distance from the previous stop (if the route is too far, the path-finding will fail and the NPC will not move). New patrol stops can be added by pressing the 'Z' key while targeting the intended position. Patrol points can be removed or re-ordered by right-clicking to open the GUI.

Routing Orders

Routing Orders are used by Courier NPCs to denote the route they should travel and which items should be transferred at each stop. To add a new route-point, press the 'Z' key with the intended block (and side!) targeted. Right-click the Routing Order to adjust the route type, inventory side, items transferred, or to change the route-point ordering.

Each routing point operates on a specific side of the inventory, enabling sided-inventory interaction for furnaces and mod-added inventories. To change the target side, open the Routing Orders GUI and click the button labeled with the current side (it will say on of: North, South, East, West, Up, or Down). The selected side will scroll through the side-list with each press of the button.

Each point on the route is allowed a single type of item-transfer. The same block/inventory may be specified multiple times for more complex interactions. To change the route-type, press the button labeled with the current route type. The types of item transfers available are:

Take Matching

The Take Matching route type instructs the courier to remove any items matching those specified in the points filter list. The courier will continue to take items matching the filters until either there are no remaining items or his inventory is full.

Deposit Matching

The Deposit Matching route type instructs the courier to deposit any items in his backpack that match the filters specified for that point. The courier will continue to deposit matching items until either his inventory is empty or the target inventory is full.

Take Non-Matching

The Take Non-Matching route type instructs the courier to remove from the target inventory any item that does not match the filter list specified for that route point. An empty filter list will see the courier remove all items from the target inventory. The courier will continue to remove any non-matching items as long as he has room in his backpack.

Deposit Non-Matching

The Deposit Non-Matching route type instructs the courier to deposit into the target any items in his backpack that do not match any of the filters specified for that route point. An empty filter list will see the courier deposit all of his items. The courier will continue to deposit non-matching items as long as there is room in the target inventory.

Fill Target

The Fill Target route type will see the courier attempt to fill the target inventory with the specified quantities of the specified items. If the target inventory already contains the specified amount, no action will be taken. The courier will continue to deposit items into the target inventory until either the specified quantity is met or the courier is out of the specified items.

Fill Courier

The Fill Courier route type will see the courier attempt to fill his inventory from the specified target, of the items specified, up to the specified quantity. The courier will continue to take items as long as he currently is carrying less than specified and the target still has items to take.

Trade Orders

Trade Orders are equipped by Traders in the orders slot, and allow specification of the trade route and what trades will be offered. More details regarding their function will be added when the Trader NPCs are finished being developed.

Command Baton Interaction

The Command Baton gives a player the means to issue orders to owned or same-team NPCs. Each Command Baton stores its own list of NPC targets; multiple Batons may be used for 'command groups'. The Command Baton also functions as a sword, doing damage equivalent to a same-material sword.

The list of commanded NPCs is displayed in the upper-left of the screen. The current target is displayed in the upper-right of the screen. To add or remove an NPC from the list of commanded NPCs, right click while targeting that NPC.

Orders are issued to a Batons' commanded NPCs through the item-interaction keybinds. Orders are issued with the currently highlighted block or entity as the target. Orders are issued to the entire list of commanded NPCs for that Baton. To issue an order press the corresponding order key. The currently available keys/commands are:

Z – Clear current command

X – Attack target, or move to target position while attacking any sighted enemies

C – Follow target / Guard target / move to target position / Mount target Horse

V – Set home point, will clear point if sneak is held while issuing order.

B – Set upkeep point, will clear point if sneak is held while issuing order.

Base NPC Stats and Attributes

Health

Armor

Damage

Work Effectiveness

Level

Experience

Creative Mode Interaction and Advanced Controls

- Players in creative mode have access to the inventory GUI for all faction-based NPCs. Faction based NPCs do not use their upkeep or work orders slots, so these slots may be filled with items to act as custom-rewards for when the NPC is slain. They also do not use their primary weapon slot to determine combat type, so you may equip any item in their weapon slot. However, if using a non-weapon item, it is recommended to set an Attack Damage Override, as the NPCs do use the weapon to determine their base attack damage.
- Players in creative mode may command a faction-based NPC to follow/stop following by shift-right clicking on it.
- Players in creative mode have additional controls available on all NPCs. These controls are accessible via the 'Creative Controls' button in the NPCs main inventory screen. The additional controls are:
 - Set Owner Name – useful for reassigning a player-owned NPC to a different player. Has no effect on faction-owned NPCs.
 - Enable/Disable wander – turn on/off the NPCs wander AI. Temporary setting, not saved. Should be used to aid in structure or map creation and NPC positioning.
 - Attack Damage Override – if set to ≥ 0 , this value will be used for attack damage instead of the NPCs equipped weapon. Most useful for creating custom NPC bosses or subtypes.
 - Armor Value Override – if set to ≥ 0 , this value overrides the armor value from whatever armor the NPC is wearing. Most useful for creating custom NPC bosses or subtypes that should be armored but still show their texture.
 - Max Health Override – if set to > 0 , this value will be used to determine the NPCs max health. Can be used in combination with the other overrides to create custom NPC bosses.
 - Custom Texture Override – may specify a custom lookup type for the NPC. This custom type should exactly match the custom type specified in the skin-pack file. E.g. If the skin-pack has 'custom.boss.1=boss1.png', then this field should say 'custom.boss.1'. This field/input box will be moving into the main NPC inventory/gui shortly to allow for all users to specify custom textures for their player-owned npcs.

NPC INVENTORIES

- All npcs have full inventory accessibility for equipment slots
 - main-hand slot determines work/combat type/inventory-size for couriers/bonus effectiveness for bards
 - armor slots are used for actual armor
 - upkeep slot is for upkeep orders -- where to get the food
 - orders slot is for work/combat/route orders -- where to work / what to fight / what items to move
- All npcs have an 'upkeep order' slot
 - simple work-order that denotes a single point for npc upkeep.
 - allows setting the amount of upkeep to withdraw
 - allows setting the block-side to withdraw from (in the case of sided inventories)
- all npcs have an 'orders' slot, the specific item used in this slot varies by npc type:
 - worker = work order, denotes what sites and in what order a workers should work
 - courer = routing slip, denotes what sites and what items a courier should move
 - combat = combat order, denotes a patrol route for combat npcs.
- All NPCs have an offhand slot. This slot is available to all NPC types and subtypes.
 - Equipping a 'Shield' in this slot will increase NPC armor value dependent upon shield material level.
 - Equipping any weapon in this slot will increase NPC damage output by 150% (output is calculated from the main-hand equipped weapon).

NPC LEVELING

- All npcs have a base (shared) level and experience value.
- Base level determines max hit-points.
- Sub-type level determines bonus damage or work-effectiveness.
- Sub-typed npcs also store level and xp per sub-type.
 - For npcs that can change subtypes (combat,worker), current level is looked up per-subtype;
 - Each work/combat type will return a different level/experience value.
- When an NPC gains experience, it is applied to both his base-level/xp, as well as the sub-type level/xp
- Npcs with no subtypes will have the same value for their base and (single) subtype level/xp values.

NPC HEALING

- All npcs will 'heal' over time on their own, slowly. The time/delay between heals is customizable via config file.
- Player-owned NPCs will require upkeep be met in order to heal – they will not auto-heal when hungry.

NPC SKIN PACKS

- Custom skin-packs may be placed into the config/AWConfig/npc/skin_pack/ folder
- Skin-packs should contain only minecraft skin-format .png files and a single skin-pack.meta file

- The skin-pack.meta file is should be specified with one entry per line, in the format of:
 - npcType.npcSubType=image_name
- Each npc type may be specified multiple times with separate images
- When multiple images are found for an npc, the npc will be assigned a random skin from those found for his type/subtype
- Examples:
 - worker=worker1.png
 - worker=worker2.png
 - worker.farmer=farmer1.png
- Custom npc types may be specified in the skin-pack.meta file, these custom npc types may be referenced in the npc gui 'custom texture' field.

NPC FACTIONS

- There are currently five factions (and the corresponding biomes they should be found in)(biome is merely a guideline and not enforced by the NPC):
 - Bandits/Brigands (plains/forests)
 - Pirates (islands/oceans/coastal areas)
 - Vikings (tundra, taiga, colder biomes)
 - Jungle Natives (jungle, tropical forests, warm/wet biomes)
 - Desert Natives (deserts, dry/hot biomes)
- There are an additional three factions available that must be customized through configuration file and skin-packs. These custom types do not come with any textures or localizations for their naming by default, but are available for intrepid map designers to further customize the experience.
- There are currently twelve subtypes for each faction:
 - Soldier
 - Mounted Soldier
 - Elite Soldier
 - Archer
 - Mounted Archer
 - Elite Archer
 - Leader
 - Elite Leader
 - Trader
 - Priest
 - Civilian Male
 - Civilian Female
- The only difference between the normal and 'elite' varieties is that the 'elite' varieties require a much higher faction standing before they will be neutral. The elite varieties are meant to serve as treasury / elite guards for areas in structures that a player is not supposed to enter regardless of faction standing (or at least not until they have very high standing).
- The 'elite' faction offset is configurable via the npcs config file.
- Starting faction standing for each faction is configurable via the npcs config file.

- Faction standing for each faction vs. each other faction is configurable via config file. You can have bandits be hostile vs. pirates for instance.
 - Faction standing may be lost by killing any npc belonging to a particular faction. The amount lost is configurable via config file.
 - Faction standing may be gained by trading with a trader belonging to a particular faction. The amount of standing gained per trade is configurable via config file.
 - Faction standing is tracked per-player – a players’ team has no effect on their faction standing.
 - Civilian NPCs serve no purpose – they are purely decorative, for use by map and structure designers. They may be equipped and given custom skins/names like any other NPC, but have only basic AI functions (wander, stay near home) and no interactivity.
 - Starting health for each faction based NPC type / subtype can be specified in the configuration file.
 - Custom names for each NPC faction name, NPC type, and subtype may be specified in the configuration file. Section IV – Structure Module
- Instruction Manual WIP

NPC Module Items

NPC Recruiting Slips (NPC Spawners)

The NPC Recruiting Slip spawns a single NPC when used. Right click it on the block where you wish to spawn the NPC. The NPCs ‘home’ point will be the block targeted. An NPC may be repacked into a Recruiting Slip by pressing the ‘Repack’ button in his interaction GUI. A repacked NPC retains all equipment, levels, and health statistics when respawned.

NPC Orders (Upkeep, Routing, Combat, Trade, Work)

See the NPC Orders section for details about these items’ functions.

Command Baton

See the Command Baton section for details regarding this items use and functions.

Ration Pack

Used as a crafting component for NPC Recruiting Slips

NPC Module Blocks

Town Hall

See the Town Hall section for details about this blocks functions.

Section IV – Structure Module

General

Configuring World Generation

Template Format and Details

Template Packs

Creating Templates

Adding New World Generation

Additional Mod Support / API

Section V – Vehicle Module

Instruction Manual WIP

Module not yet implemented.

Section VI - Credits

Programming

Shadowmage

Modeling

Shadowmage

Textures

Shadowmage

Sound

Languages

Testing

Pelirow

Dulciphi

MohawkyMagoo

Varkas

Me2003

Structures

MohawkyMagoo

NPC Skins

Shadowmage